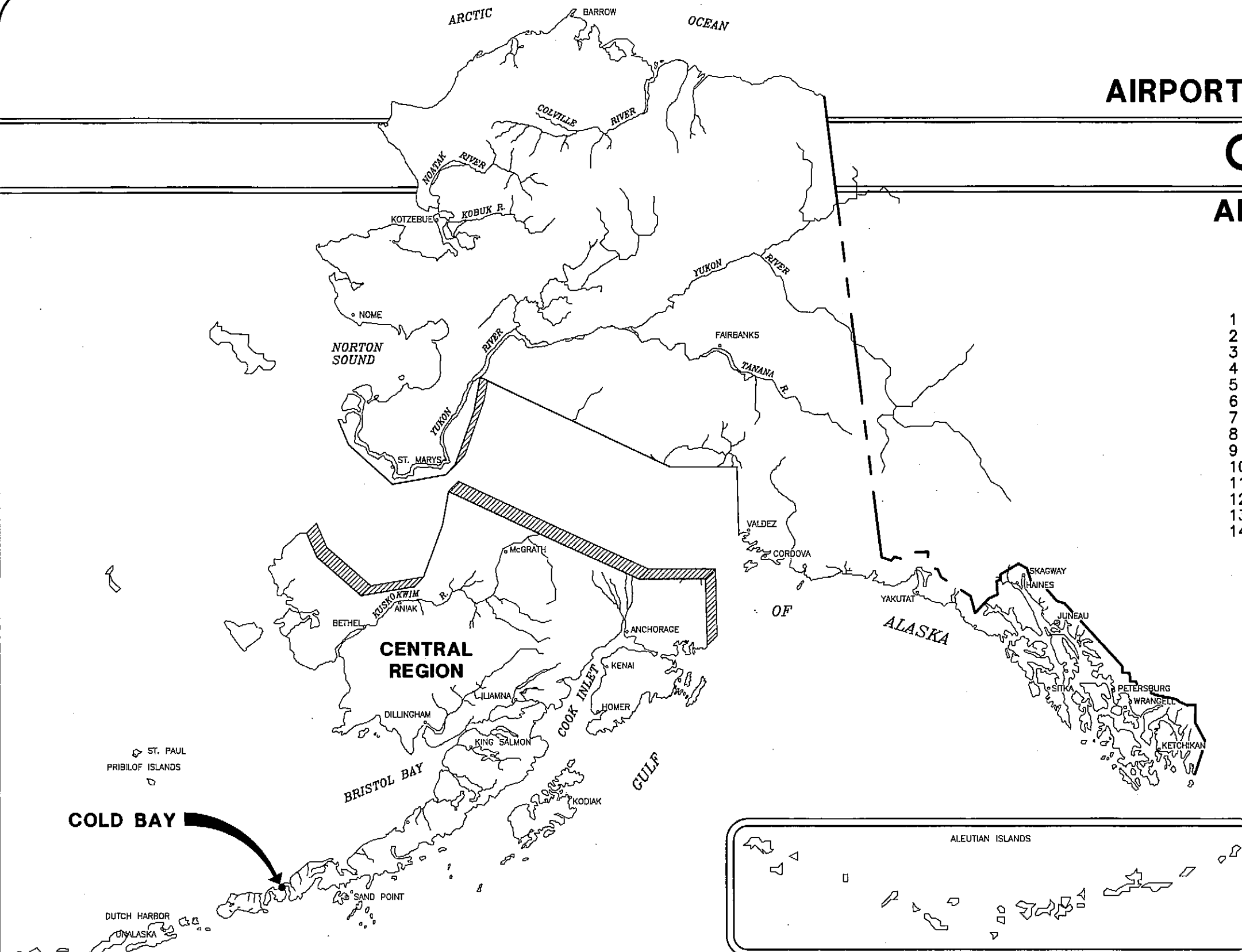
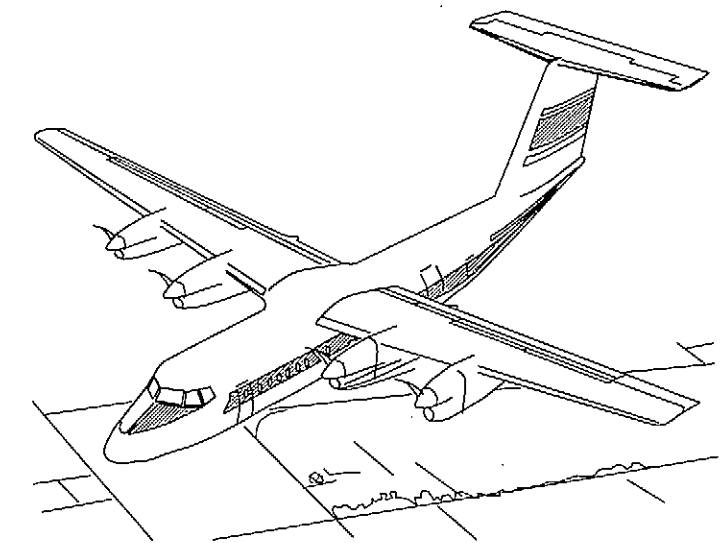


AIRPORT LAYOUT PLAN FOR COLD BAY

APRIL 23, 2004

DRAWING INDEX

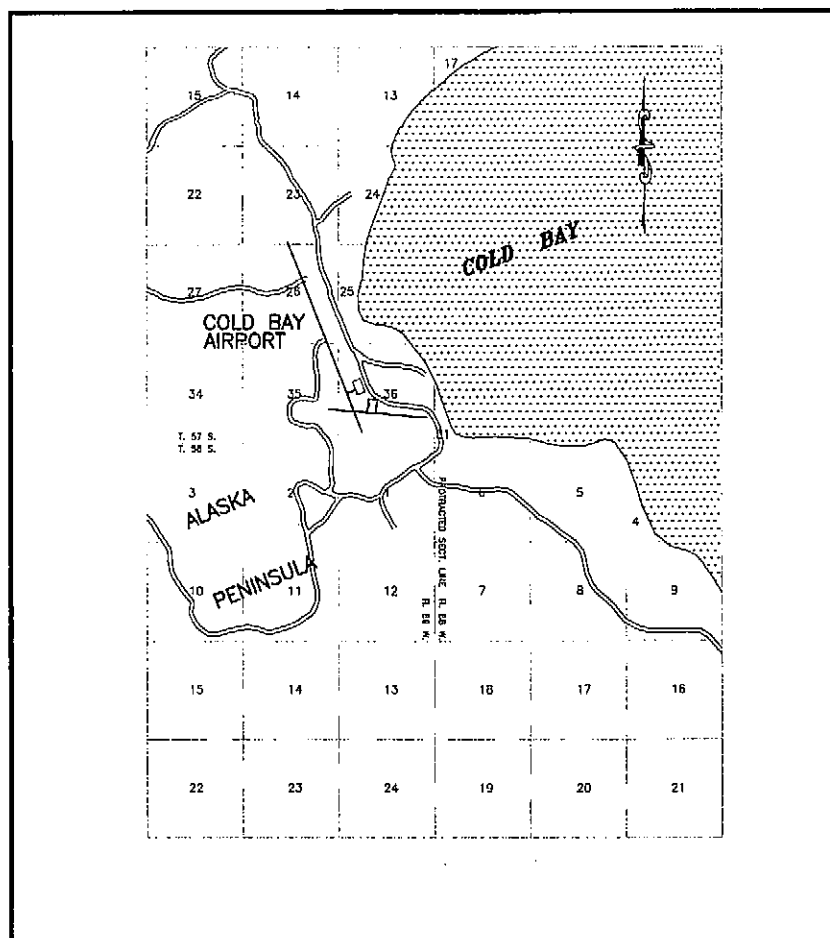
- 1 - COVER SHEET AND INDEX
- 2 - VICINITY MAP AND DATA TABLES
- 3 - AIRPORT LAYOUT PLAN - NEAR TERM
- 4 - AIRPORT LAYOUT PLAN - ULTIMATE
- 5 - TERMINAL AREA PLAN
- 6 - RUNWAY PROFILES
- 7 - RUNWAY 14/32 APPROACH SURFACES PLAN & PROFILE
- 8 - RUNWAY 08/26 APPROACH SURFACES PLAN & PROFILE
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- 10 - LAND USE PLAN
- 11 - AIRPORT PROPERTY PLAN
- 12 - AIRPORT PROPERTY PLAN
- 13 - NARRATIVE REPORT
- 14 - NARRATIVE REPORT



SPONSORED BY
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION

CONCUR *Gordon C. Keith* DATE *5/6/04*
GORDON C. KEITH, P.E. DIRECTOR OF CONSTRUCTION AND OPERATIONS
APPROVED *[Signature]* DATE *5-16-04*
ROBERT A. CAMPBELL, P.E. REGIONAL PRECONSTRUCTION ENGINEER
AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL *5/16/04*
SUBJECT TO ALP APPROVAL LETTER DATED *5/16/04*
By: *[Signature]* DATE: *5/16/04*
FAA AIRSPACE REVIEW NUMBER
02-AAL-166NRA
FAA AIRPORTS DIVISION
ALASKAN REGION, AAL-610

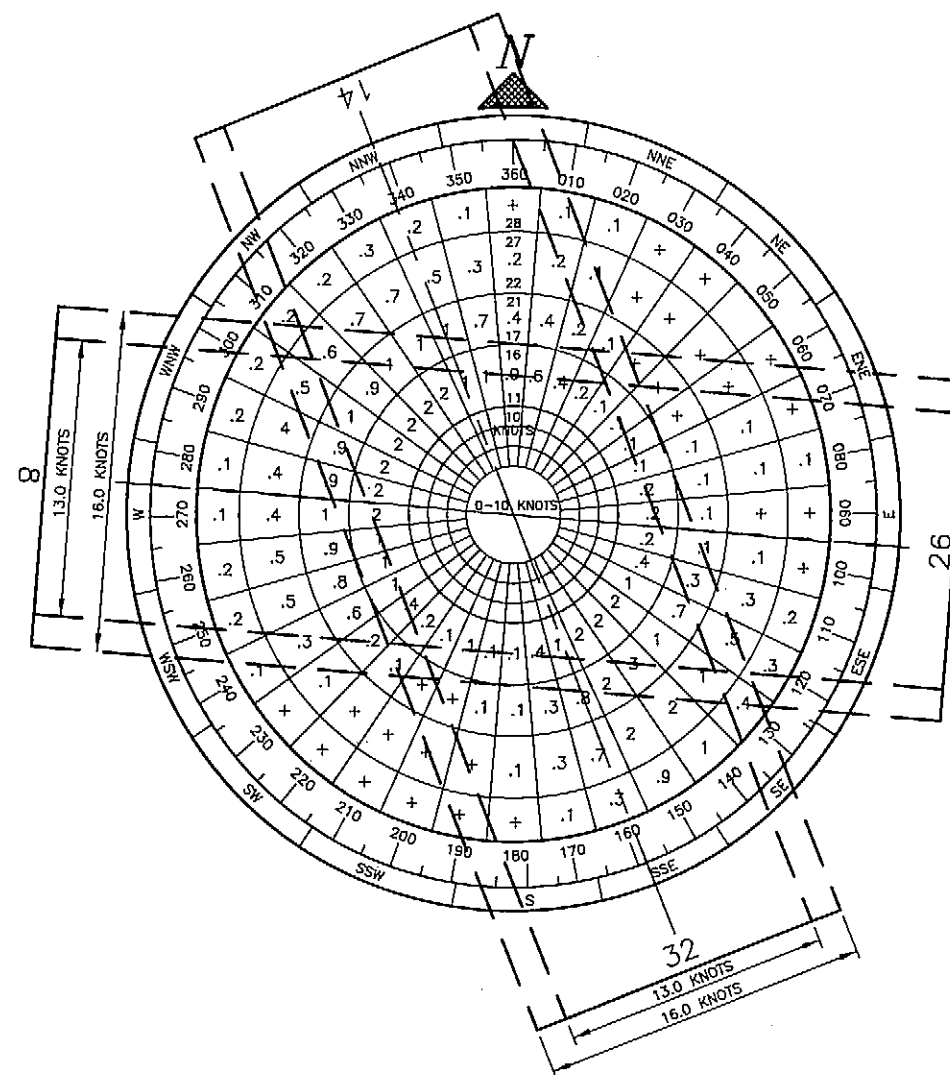
COLD BAY
AIRPORT LAYOUT PLAN
SHEET 1 OF 14



VICINITY MAP

1"=1 MILE
T 57 & 58 S, R 88 & 89 W
SEWARD MERIDIAN
U.S.G.S. COLD BAY, ALASKA

LEGEND		
ITEM	EXISTING	ULTIMATE
PROPERTY LINE	---	---
BUILDING RESTRICTION LINE	BRL	BRL
AVIGATION & HAZARD EASEMENT	---	---
AIRPORT REFERENCE POINT (A.R.P.)	●	●
WIND CONE AND SEGMENTED CIRCLE	⊙	⊙
BUILDINGS	■	■
BUILDING NUMBER	1	1
LOT NUMBER	100	100
FENCE	---	---
UNPAVED ROADWAYS	---	---
PAVED ROADWAYS/RUNWAYS	---	---
SHORELINE	---	---
ANTENNA	⊙	⊙
VASI OR PAPI	⊙	⊙
CONTOURS	100	100
ROTATING BEACON	⊙	⊙
MALSF	⊙	⊙
REIL	⊙	⊙
RUNWAY SAFETY AREA	---	---
AVIATION NAVIGATION LIGHTS	---	---
RUNWAY OBJECT FREE AREA	---	---
SURVEY MONUMENT	---	---
THRESHOLD	---	---



WIND DATA

CROSSWIND COMPONENT
13 KNOTS (APPROACH CAT. B)
16 KNOTS (APPROACH CAT. C)
20 KNOTS (APPROACH CAT. D)

R/W 14/32	81.92%	R/W 08/26	72.88%	COMBINED	95.04%
	89.27%		83.34%		98.10%
	95.00%		N/A		N/A

SOURCE: U.S. DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, NATIONAL CLIMATIC DATA CENTER
REPORT PERIOD: 01/1992- 11/1999
WIND SPEED SAMPLED IN MILES PER HOUR

NON STANDARD CONDITIONS

ITEM	EXISTING	STANDARD	FUTURE	ULTIMATE
R/W 08 SAFETY AREA LENGTH BEYOND THRESHOLD	60'	1000'	1000'	1000'
R/W 26 SAFETY AREA LENGTH BEYOND THRESHOLD	75'	1000'	1000'	1000'
R/W 14 SAFETY AREA LENGTH BEYOND THRESHOLD	225'	1000'	225'	1000'
R/W 32 SAFETY AREA LENGTH BEYOND THRESHOLD	405'	1000'	405'	1000'
R/W 14/32 SAFETY AREA WIDTH	300'	500'	500'	500'
R/W 08/26 SAFETY AREA WIDTH	300'	500'	500'	500'
FAA FSS BEYOND BRL	OBSTRUCTION	NO OBST.	OBSTRUCTION	NO OBST.
FENCE WITHIN O.F.A. WIDTH OF R/W 26, STA. 10+00 RT.	393.5'	400'	393.5'	393.5'
FENCE/ROAD WITHIN O.F.A. BEYOND R/W 26	255'	1000'	1000'	1000'
RVZ AT THE INTERSECTION OF R/W 8/26 & R/W 14/32	OBSTRUCTION	NO OBST.	OBSTRUCTION	NO OBST.
LANDFILL SEPARATION R/W 14/32	2400'	5000'	2400'	2400'

NOTE: THERE ARE NO OFZ OBJECT PENETRATIONS AND NO THRESHOLD SITING SURFACE OBJECT PENETRATIONS FOR THIS AIRPORT

BASIC DATA TABLE

RUNWAY DATA

ITEM	RUNWAY 14/32		RUNWAY 8/26	
	EXISTING	ULTIMATE	EXISTING	FUTURE
EFFECTIVE GRADE	0.20%	SAME	0.21%	0.31%
% WIND COVERAGE APPROACH CAT. B 13 KNOTS	81.92%	SAME	72.88%	SAME
APPROACH CAT. C 16 KNOTS	89.27%	SAME	83.34%	SAME
INSTRUMENT RUNWAY	PRECISION	SAME	VISUAL	NON-PRECISION
RUNWAY SURFACE	ASPH CONC	SAME	ASPH CONC	SAME
PAVEMENT STRENGTH (max)*	[lb.]	SAME	345,000	SAME
APPROACH SURFACES	50:1/34:1	SAME	34:1	SAME
VISIBILITY MINIMUM	(< 3/4 MILE)	SAME	[1 MILE]	(< 1 MILE)
RUNWAY LIGHTING	H.I.R.L.	SAME	H.I.R.L.	SAME
RUNWAY MARKING	PRECISION	SAME	NON-PRECISION	SAME
RUNWAY NAVIGATION AIDS	NDB, ILS, VASI, VOR	SAME	VASI	REIL/PAPI
AIRCRAFT APPROACH CATEGORY	C	SAME	C	SAME
AIRCRAFT DESIGN GROUP	III	SAME	III	SAME
RUNWAY SAFETY AREA DIMENSION	300'x11,050'	500'x12,000'	300'x5,295'	500'x6,235'
RUNWAY DIMENSION **	150'x10,420'	150'x10,000'	150'x5,160'	150'x6,235'
RUNWAY OBJECT FREE AREA DIMENSION	800'x12,420'	800'x12,000'	800'x5,295'	800'x6,235'
RUNWAY OBSTACLE FREE ZONE DIMENSION	400'x10,820'	400'x10,400'	400'x5,550'	400'x6,235'
GEODETIC POSITIONS (NAD 83)				
THRESHOLD 14	LAT. 55°13'20.62"N	SAME		
	LONG. 162°44'16.51"W	SAME		
THRESHOLD 32	LAT. 55°11'45.16"N	55°11'49.01"N		
	LONG. 162°43'10.26"W	162°43'12.93"W		
THRESHOLD 8	LAT. 55°11'56.31"N		55°11'56.31"N	SAME
	LONG. 162°43'38.87"W		162°43'38.87"W	SAME
THRESHOLD 26	LAT. 55°11'52.08"N		55°11'52.08"N	55°11'52.84"N
	LONG. 162°42'10.27"W		162°42'10.27"W	162°42'26.15"W
END RUNWAY 8	LAT. 55°11'56.31"N		55°11'56.31"N	55°11'57.13"N
	LONG. 162°43'38.87"W		162°43'38.87"W	162°43'56.05"W
END RUNWAY 26	LAT. 55°11'52.08"N		55°11'52.08"N	SAME
	LONG. 162°42'10.27"W		162°42'10.27"W	SAME

* PAVEMENT STRENGTHS -- SINGLE WHEEL: 99,000 lbs., DUAL WHEEL: 200,000 lbs., DUAL TANDEM: 345,000 lbs.
** SEE DECLARED DISTANCES BELOW FOR TORA/TODA/LDA DISTANCES.

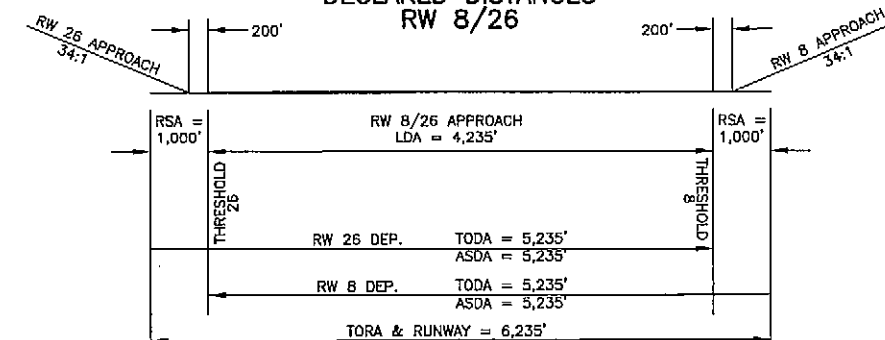
BASIC DATA TABLE

AIRPORT DATA

ITEM	EXISTING	ULTIMATE
AIRPORT ELEVATION (M.L.L.W.)*	101.6	101.5
AIRPORT REFERENCE POINT (A.R.P.) (NAD 83)	LAT. --	55°12'22.62"N
	LONG. --	162°43'27.43"W
TAXIWAY LIGHTING	M.I.T.L.	SAME
RAMP LIGHTING	FLOOD	SAME
MEAN MAX. TEMPERATURE, HOTTEST MONTH (°F)	56°	SAME
MAGNETIC DECLINATION, YEAR	14°15'E, 2000	--
AIRPORT REFERENCE CODE	C-II	SAME
AIRPORT NAVIGATION AIDS	NDB, VOR	SAME
	ILS, MALS, VASI	SAME

*THE VERTICAL DATUM USED FOR THIS PROJECT IS MEAN LOWER LOW WATER (M.L.L.W.).
THE M.L.L.W. ELEVATIONS CAN BE CONVERTED TO NGVD29 ELEVATIONS BY SUBTRACTING 4.43'.

DECLARED DISTANCES RW 8/26



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DATE: 05/12/04 1=1 v=plan daveb

AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL
SUBJECT TO ALP APPROVAL LETTER DATED 5/16/04

By: *[Signature]*
FAA AIRPORTS DIVISION
ALASKAN REGION, AAL-810

DATE: 5/26/04

FAA AIRSPACE REVIEW NUMBER: 02-AAL-166NRA

BY DATE REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: *[Signature]*
STEPHEN M. RYAN, P.E. DESIGN SECTION CHIEF
APPROVED: *[Signature]*
HARVEY M. DOUTHITT, P.E. PROJECT MANAGER

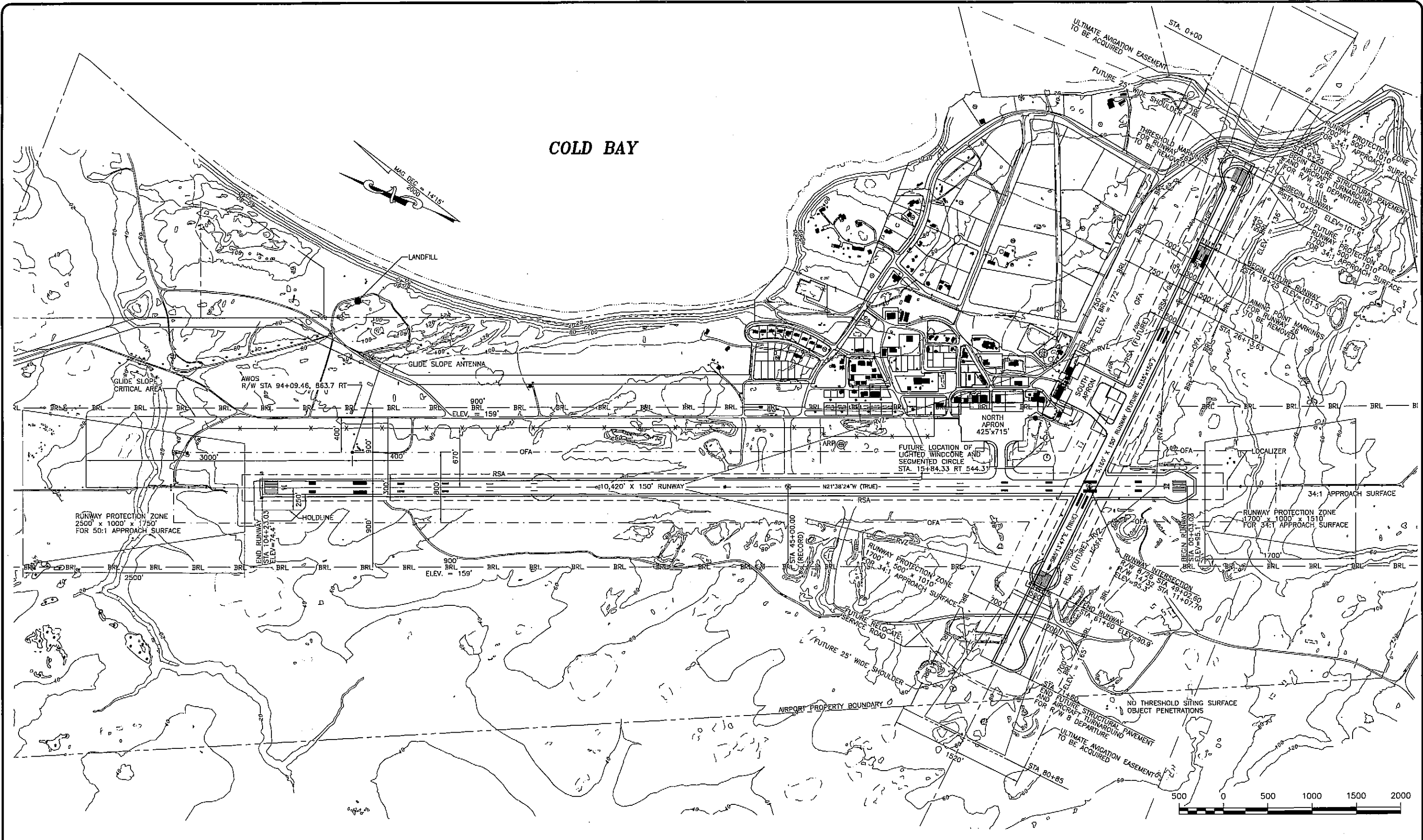
DATE 05/12/04
DESIGN LMB
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COLD BAY AIRPORT

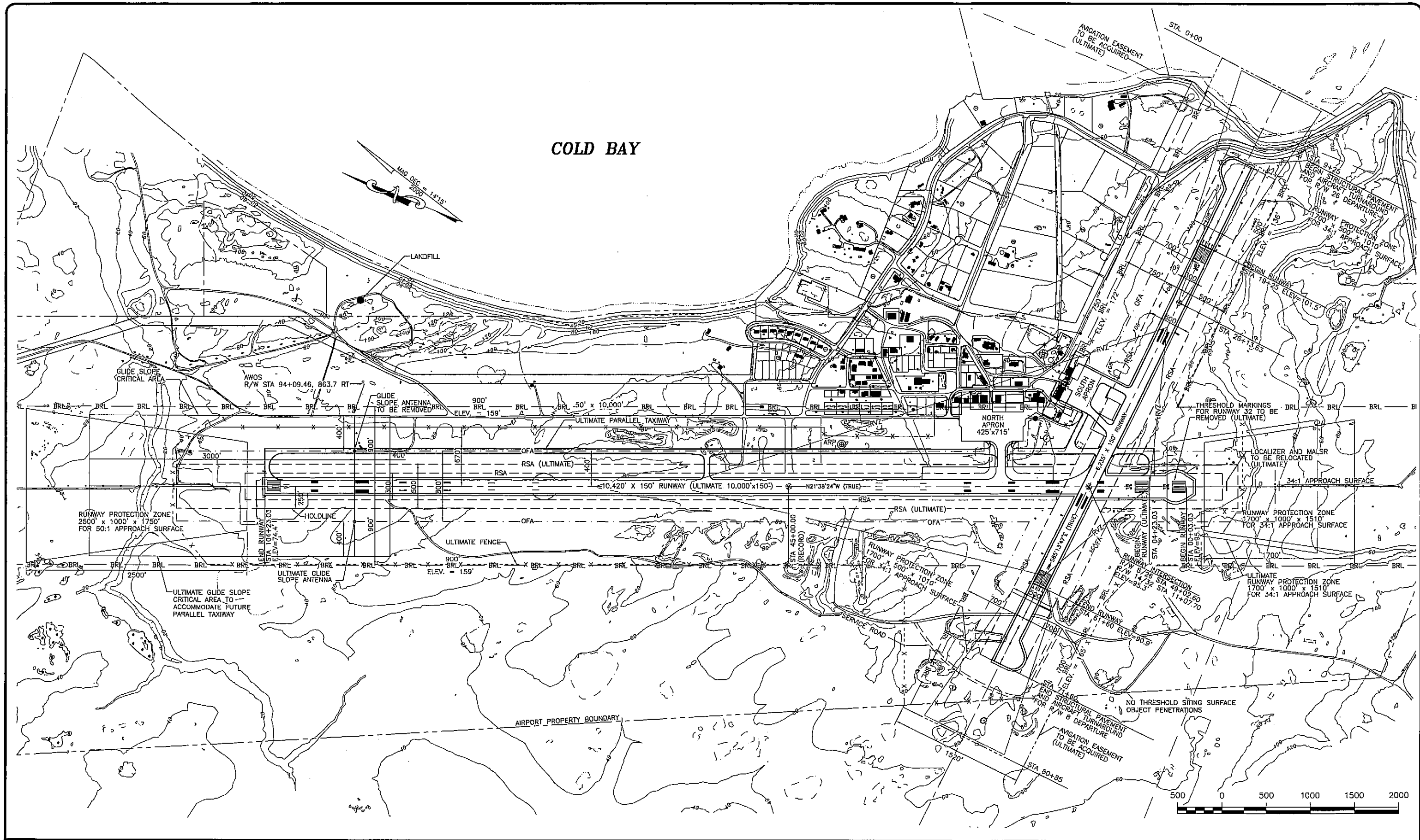
AIRPORT LAYOUT PLAN

VICINITY MAP AND DATA TABLES

SHEET
2
OF
14



FILE: Z:\ALP3 DATE: 02/17/04 1=1 v=plan daveb	AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL SUBJECT TO ALP APPROVAL LETTER DATED <u>5/16/04</u> BY: <u>[Signature]</u> DATE: <u>2/22/04</u> FAA AIRPORTS DIVISION ALASKAN REGION, AAL-810	BY _____ DATE _____ REVISIONS _____ BY _____ DATE _____ REVISIONS _____ BY _____ DATE _____ REVISIONS _____	STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES CENTRAL REGION APPROVED: <u>[Signature]</u> DESIGN SECTION CHIEF STEPHEN M. RYAN, P.E. APPROVED: <u>[Signature]</u> PROJECT MANAGER HARVEY M. DOUTHITT, P.E.	DATE <u>04/09/04</u> DESIGN <u>LMB</u> DRAWN <u>SJM</u> CHECKED <u>ESW</u>	COLD BAY AIRPORT AIRPORT LAYOUT PLAN AIRPORT LAYOUT PLAN - NEAR TERM	SHEET 3 OF 14
	FAA AIRSPACE REVIEW NUMBER: 02-AAL-166NRA					

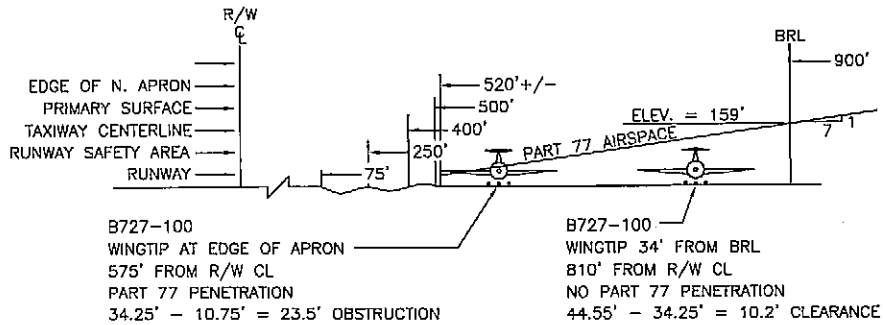


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<p>AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL SUBJECT TO ALP APPROVAL LETTER DATED 5/12/04 BY: <i>[Signature]</i> DATE: 5/26/04 FAA AIRPORTS DIVISION ALASKAN REGION, AAL-010</p>				<p>APPROVED: STEPHEN M. RYAN, P.E. DESIGN SECTION CHIEF</p>		<p>APPROVED: HARVEY M. DOUTHITT, P.E. PROJECT MANAGER</p>					
<p>BY: DATE REVISIONS</p>											

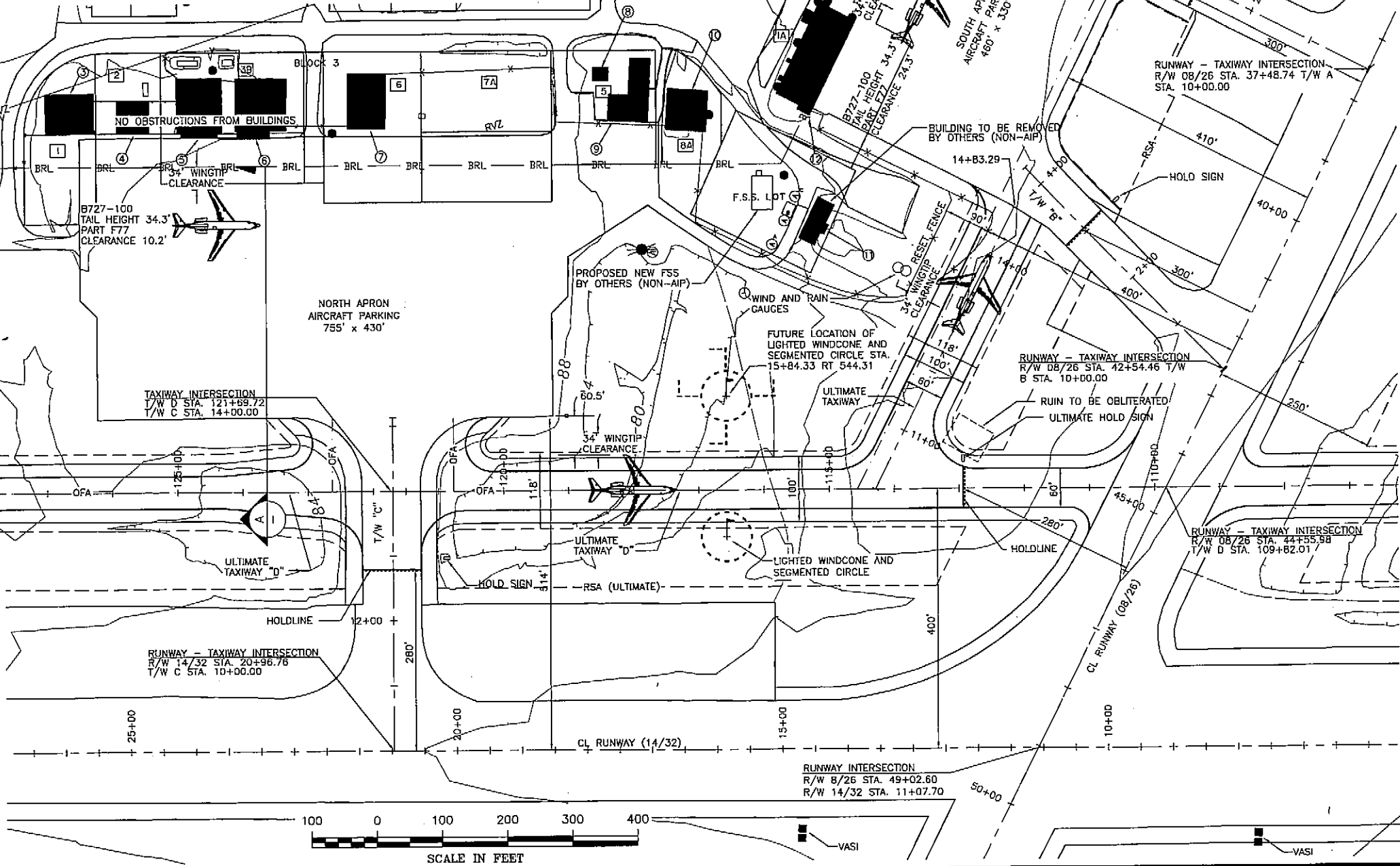
TERMINAL AREA BUILDING TABLE					
No.	Description	Top Elev.	Obstruction Marking		Comment
			Current	Future	
					Blk. 10 Lot <u>2A</u>
①	US Weather Service Balloon Building	117.552	-	-	Blk. 10 Lot <u>5</u>
②	DOT/PF Air Rescue Fire Fighting Building and Airport Managers Office	116.289	-	-	Blk. 10 Lot <u>3A</u>
③	Cold Sea International	117.972	-	-	Blk. 3 Lot <u>1</u>
④	Department of Interior Fish and Wildlife Hanger	115.374	-	-	Blk. 3 Lot <u>2</u>
⑤	Peninsula Airways Inc. Hanger	114.685	-	-	Blk. 3 Lot <u>3B</u>
⑥	Peninsula Airways Inc. Hanger/Terminal	114.071	-	-	Blk. 3 Lot <u>3B</u>
⑦	Evergreen Aviation Inc. Hanger	113.576	-	-	Blk. 3 Lot <u>6</u>
⑧	DOT/PF Airport Lighting, Generator Enclosure and Generator Switch Gear	100.653	-	-	Blk. 3 Lot <u>5</u>
⑨	DOT/PF Old Fire Station	121.94 (Tower) 111.932 (High Bldg. Point) 106.771 (Main Bldg.)	-	-	Blk. 3 Lot <u>5</u>

TERMINAL AREA BUILDING TABLE (CONT.)					
No.	Description	Top Elev.	Obstruction Marking		Comment
⑩	Cold Bay Emergency Medical Council – Clinic	103.520	–	–	
⑪	FAA – Flight Service Station	117.743 Antenna Above Tower Elevations 135.200 (Tower A) 135.200 (Tower B) 135.200 (Tower C)			FSS Lot Antenna A penetrates PART 77 – 7:1 Transitions by 1.79’ Runway 14/32 Obstruction Lighting Required
⑫	Reeve Aleutian Airways – Passenger Terminal	116.827	–	–	Blk. 1 Lot 1A
⑬	Frosty Fuels	106.427	–	–	Blk. 1 Lot 2A
⑭	Frosty Fuels	117.743	–	–	Blk. 1 Lot 3A

TAXIWAY DATA TABLE			
	R/W 8-26		R/W 14-32
	T/W "A"	T/W "B"	T/W "C"
TAXIWAY WIDTH	75'	75'	100'
TAXIWAY LENGTH	330'	350'	400'
TAXIWAY SAFETY AREA WIDTH	118'	118'	118'
TAXIWAY OFA	186'	186'	186'
TAXIWAY WINGTIP CLEARANCE	34'	34'	34'
TAXIWAY DESIGN GROUP	III	III	III
TAXIWAY SHOULDER WIDTH	20'	20'	20'



A R/W 14/32 AIRCRAFT PARKING CLEARANCES
NTS



FILE: 2A07072\201\CAD
DATE: 02/17/04 1=1 vmap

AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL
SUBJECT TO ALP APPROVAL LETTER DATED 5/16/04
BY: J. J. Smith DATE: 5/20/04
FAA AIRPORTS DIVISION
ALASKAN REGION, AAL-010

FAA AIRSPACE REVIEW NUMBER: 02-AAL-166NRA

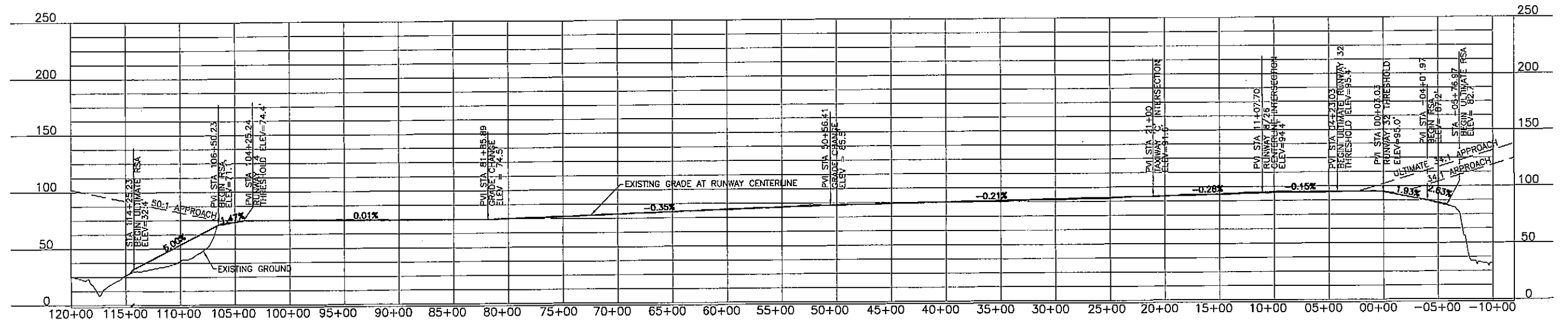
BY	DATE	REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION
APPROVED: Stephen M. Ryan, P.E. DESIGN SECTION CHIEF
APPROVED: Harvey M. Douthitt, P.E. PROJECT MANAGER

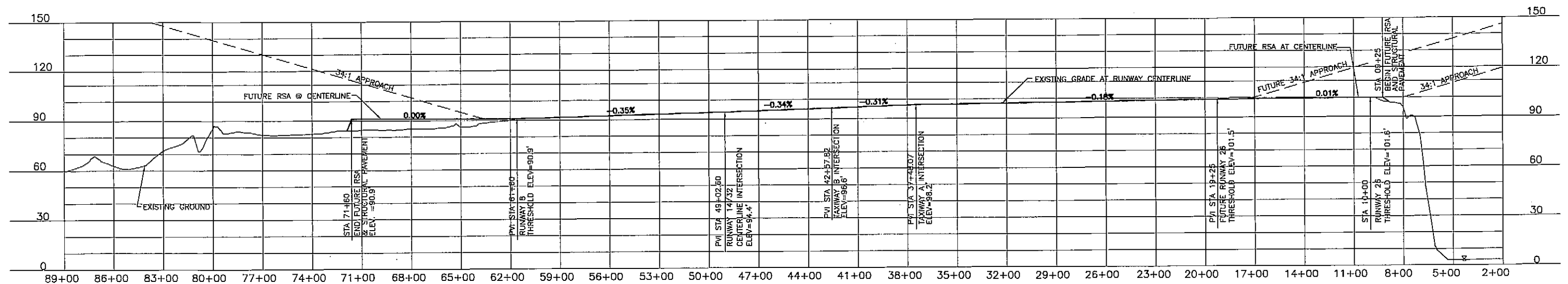
DATE 04/09/04
DESIGN LMB
DRAWN SJM
CHECKED ESW

COLD BAY AIRPORT
AIRPORT LAYOUT PLAN
TERMINAL AREA PLAN

SHEET
5
OF
14



RUNWAY PROFILE 14/32
SCALE : 1" = 500'



RUNWAY PROFILE 8/26
SCALE : 1" = 300'

FILE:
Z:\ALP6
DATE:
02/17/04 1=1 v=plan daveb

AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL
SUBJECT TO ALP APPROVAL LETTER DATED 5/18/04
By: [Signature] DATE: 5/26/04
FAA, AIRPORTS DIVISION
ALASKAN REGION, AAL-810

FAA AIRSPACE REVIEW NUMBER: 02-AAL-166NRA

BY	DATE	REVISIONS

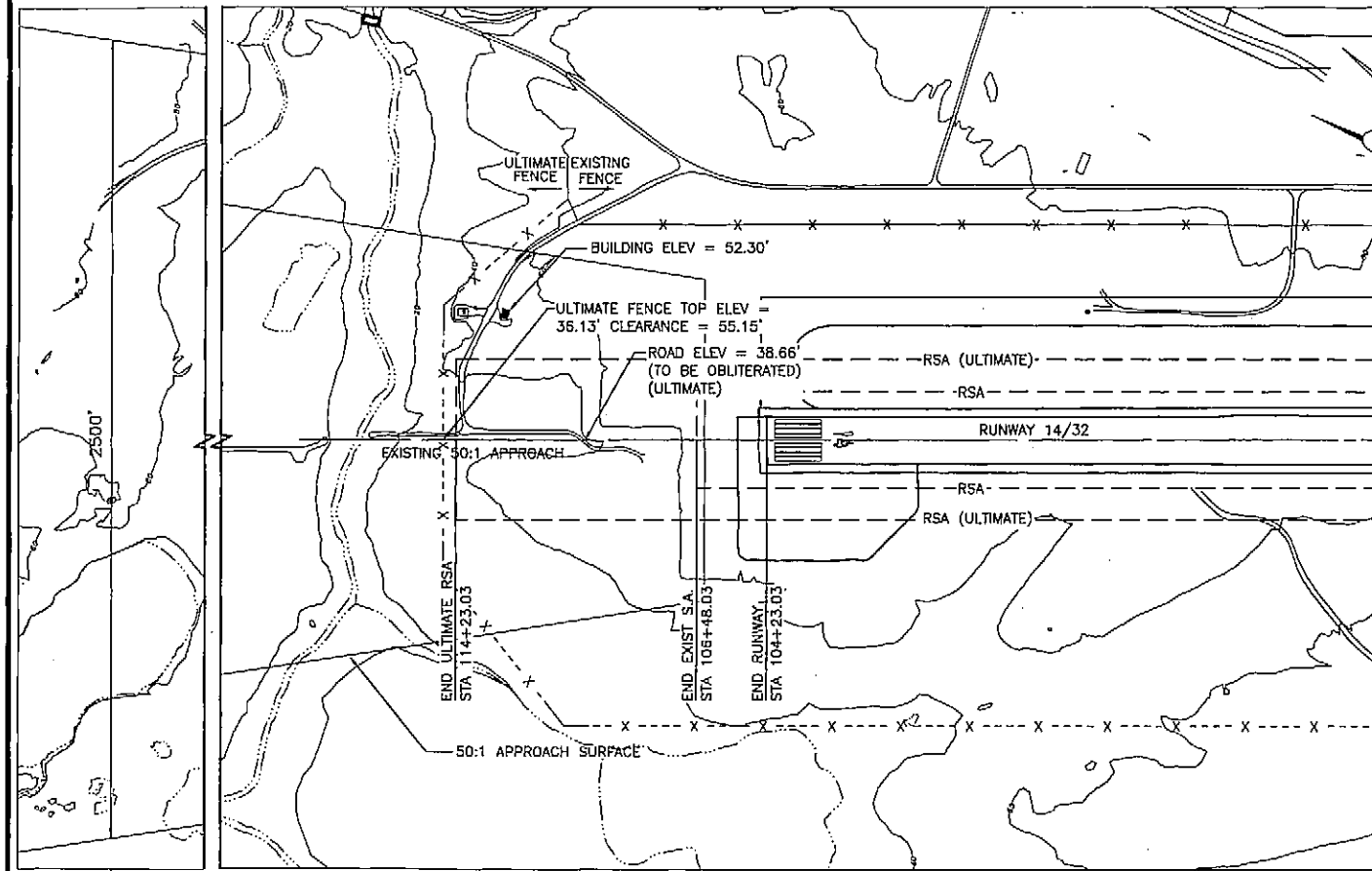
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: [Signature] DESIGN SECTION CHIEF
STEPHEN M. RYAN, P.E.
APPROVED: [Signature] PROJECT MANAGER
HARVEY M. DOUTHIT, P.E.

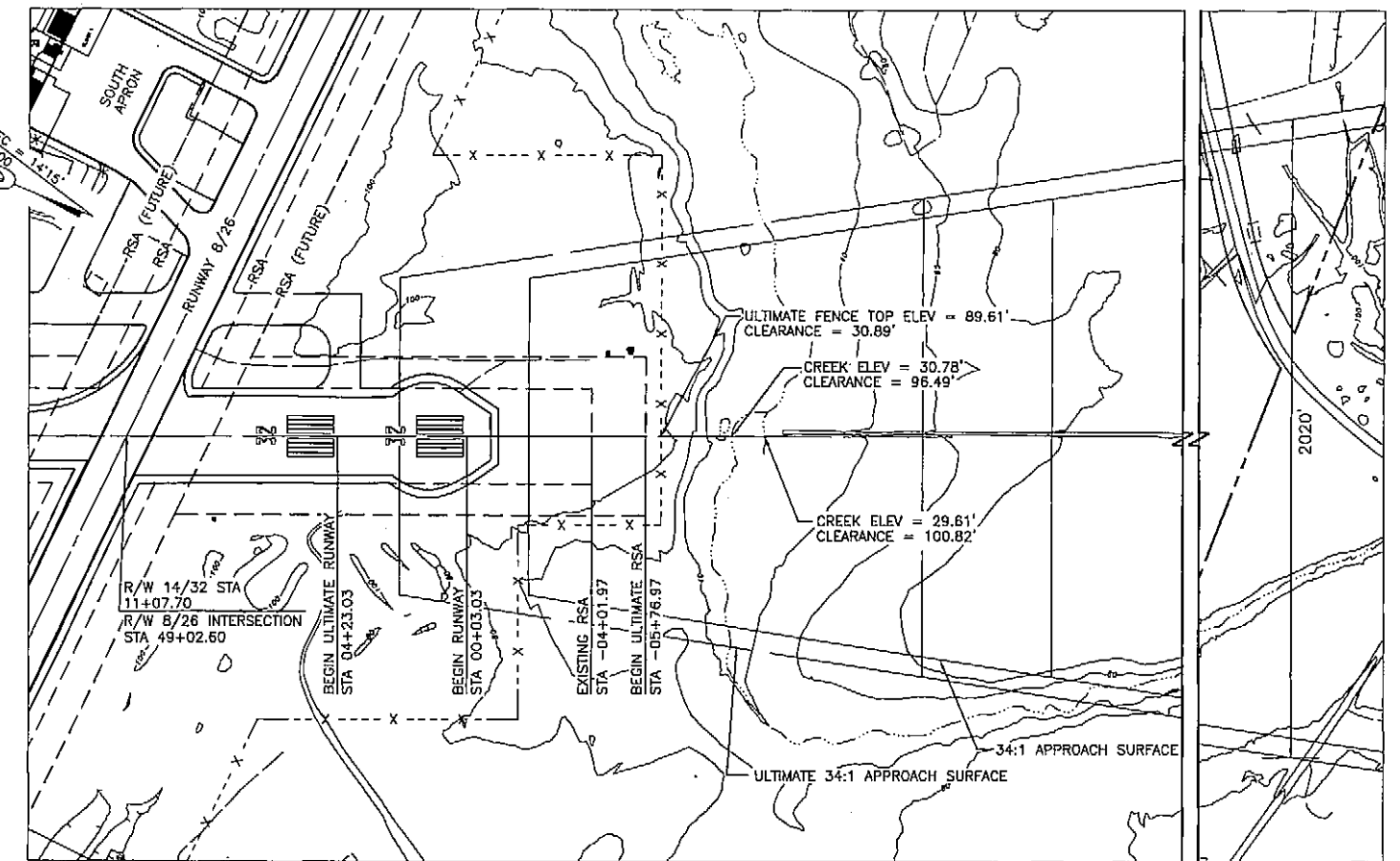
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DESIGN LMB
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CHECKED ESW

COLD BAY AIRPORT
AIRPORT LAYOUT PLAN
RUNWAY PROFILES

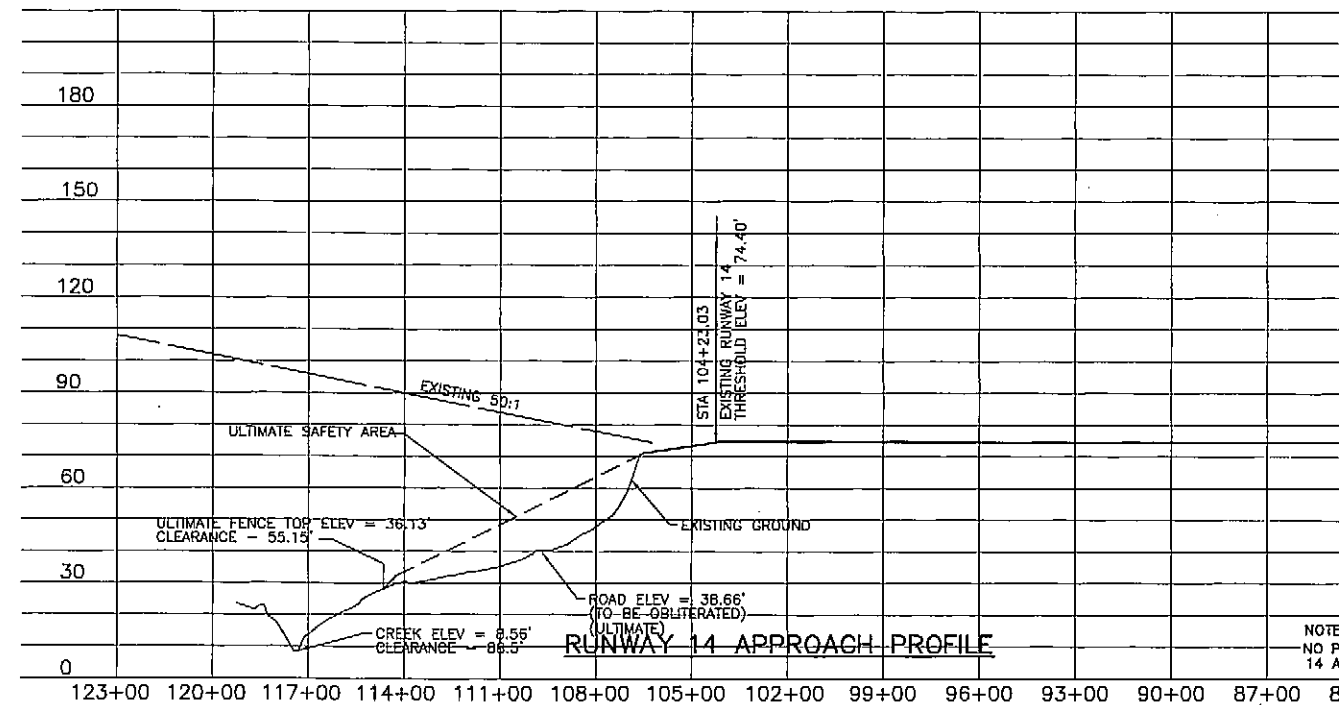
SHEET
6
OF
14



RUNWAY 14/32 APPROACH PLAN

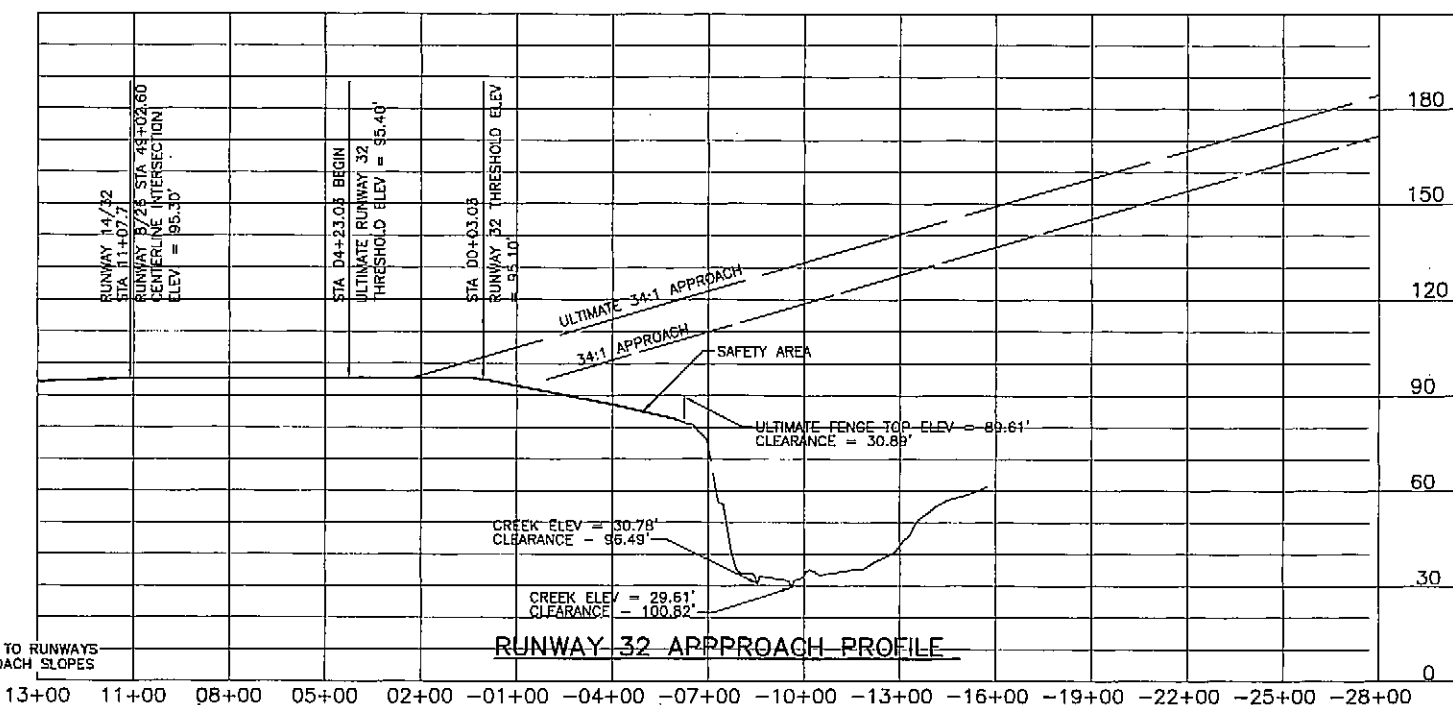


RUNWAY 32 APPROACH PLAN



RUNWAY 14/32 APPROACH PROFILE

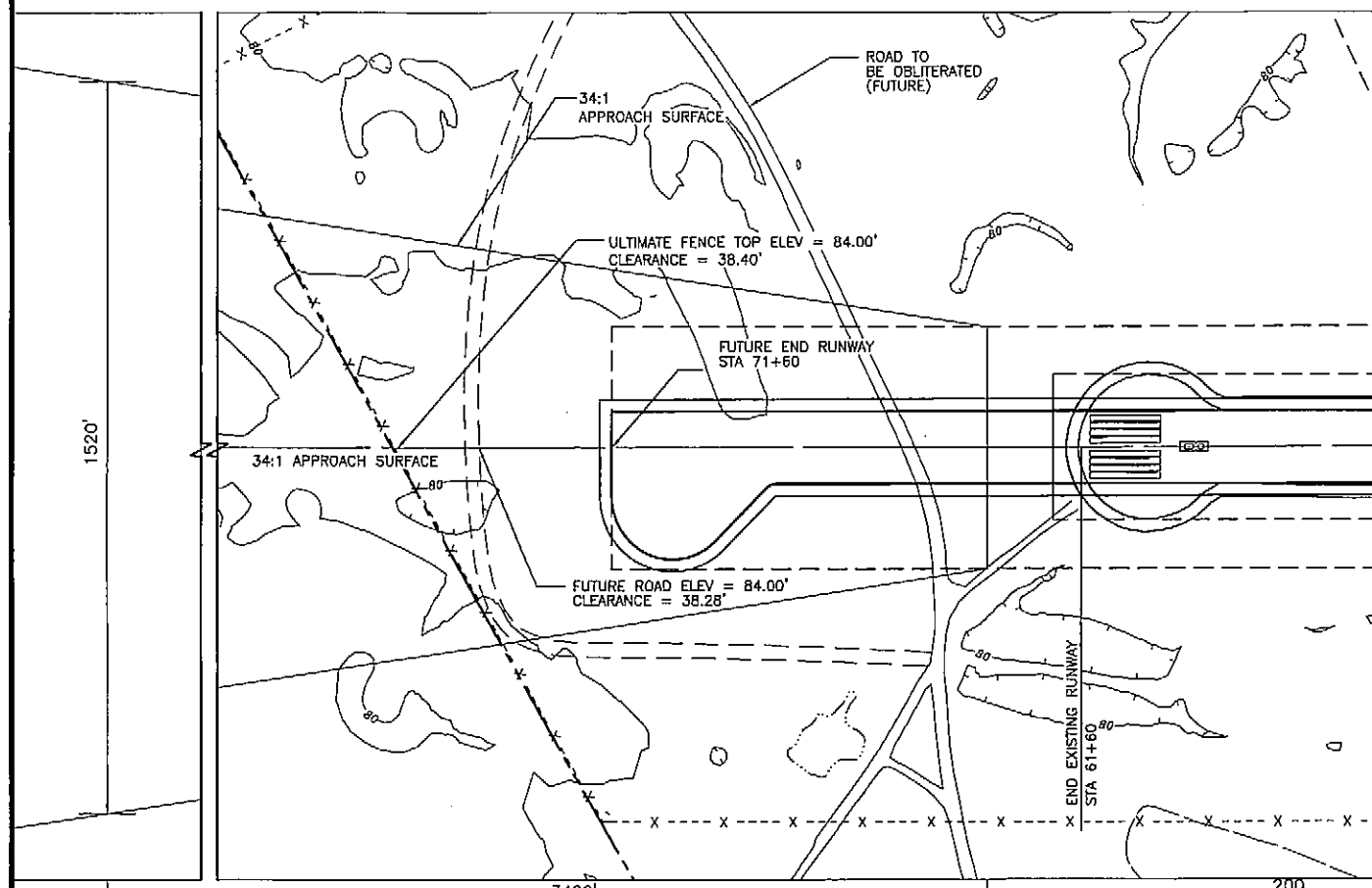
NOTE:
NO PENETRATIONS TO RUNWAYS
14 AND 32 APPROACH SLOPES



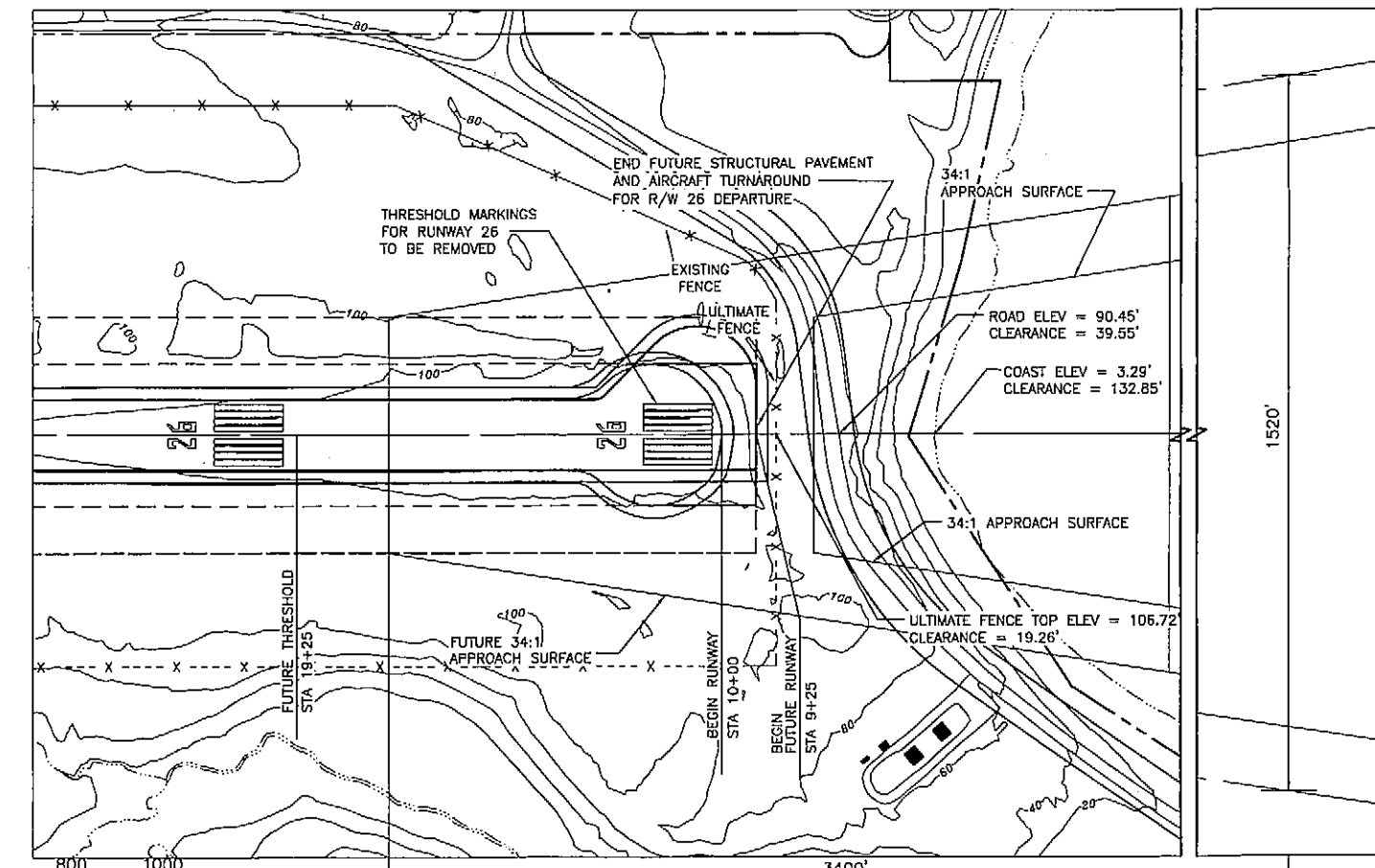
RUNWAY 32 APPROACH PROFILE

AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL SUBJECT TO ALP APPROVAL LETTER DATED <u>5/16/04</u> By: <u>[Signature]</u> DATE: <u>5/16/04</u> FAA AIRPORTS DIVISION ALASKAN REGION, AAL-610		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES CENTRAL REGION APPROVED: <u>[Signature]</u> DESIGN SECTION CHIEF APPROVED: <u>[Signature]</u> PROJECT MANAGER HARVEY M. DOUTHITT, P.E.		DATE: <u>02/17/04</u> DESIGN: <u>LMB</u> DRAWN: <u>SJM</u> CHECKED: <u>ESW</u>	COLD BAY AIRPORT AIRPORT LAYOUT PLAN RUNWAY 14/32 APPROACH SURFACES PLAN & PROFILE	SHEET 7 OF 14
FAA AIRSPACE REVIEW NUMBER: 02-AAL-166NRA		BY: _____ DATE: _____ REVISIONS: _____				

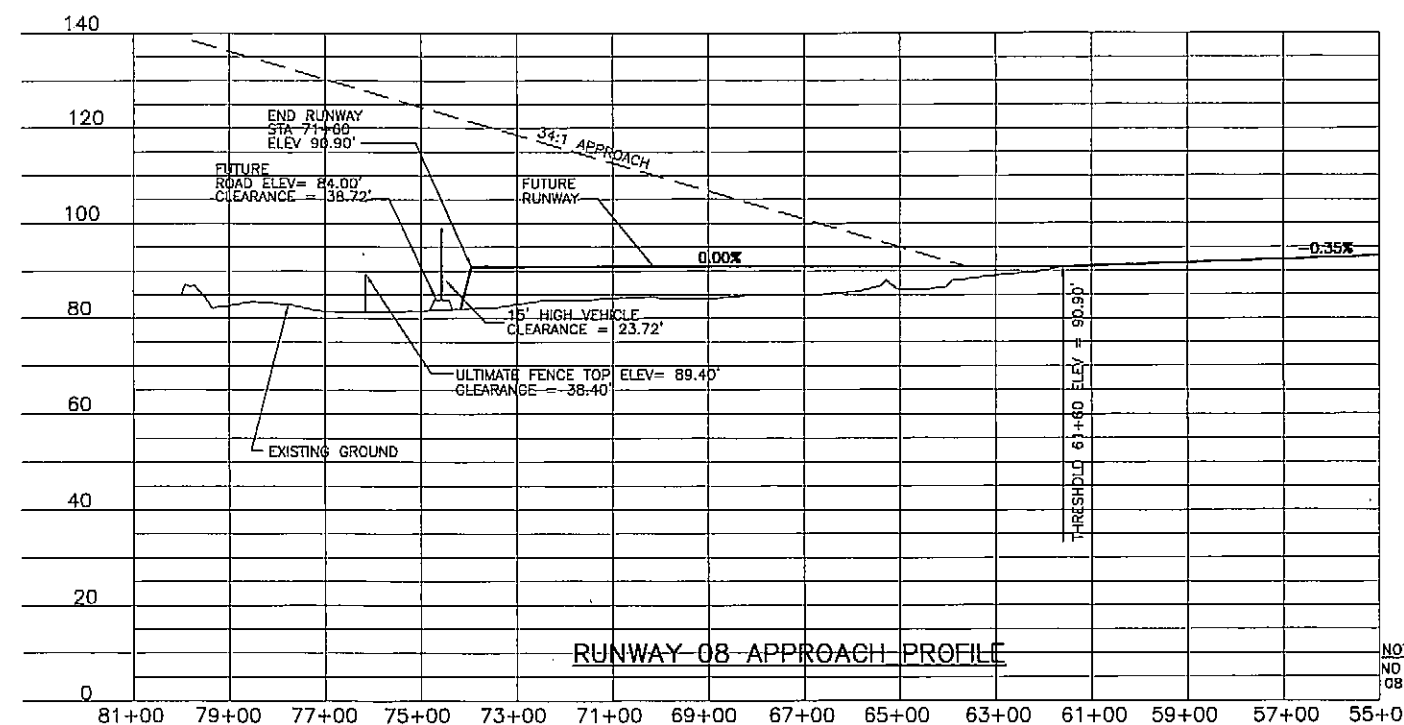
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DATE:
02/17/04 1=1 v=plan daveb



RUNWAY 08 APPROACH PLAN

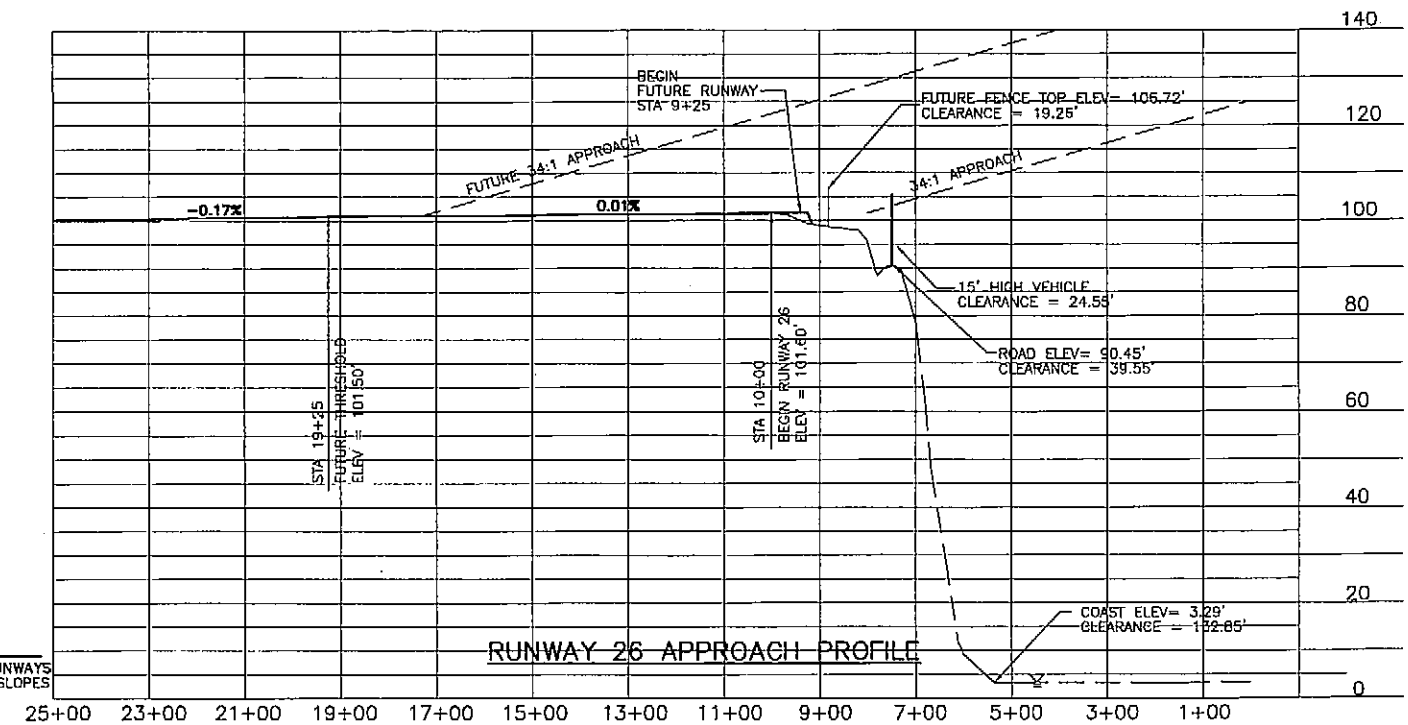


RUNWAY APPROACH 26 PLAN



RUNWAY 08 APPROACH PROFILE

NOTE:
NO PENETRATIONS TO RUNWAYS
08 AND 26 APPROACH SLOPES



RUNWAY 26 APPROACH PROFILE

FILE:
Z:\ALPB
DATE:
02/17/04 1:11 vmlon daveb

AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL
SUBJECT TO ALP APPROVAL LETTER DATED 5/16/04
By: [Signature] DATE: 5/26/04
FAA AIRPORTS DIVISION
ALASKAN REGION, AAL-810

FAA AIRSPACE REVIEW NUMBER: 02-AAL-166NRA

BY DATE REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: [Signature] DESIGN SECTION CHIEF
STEPHEN M. RYAN, P.E.
APPROVED: [Signature] PROJECT MANAGER
HARVEY M. DOUTHIT, P.E.

DATE 02/17/04
DESIGN LMB
DRAWN SJM
CHECKED ESW

COLD BAY AIRPORT

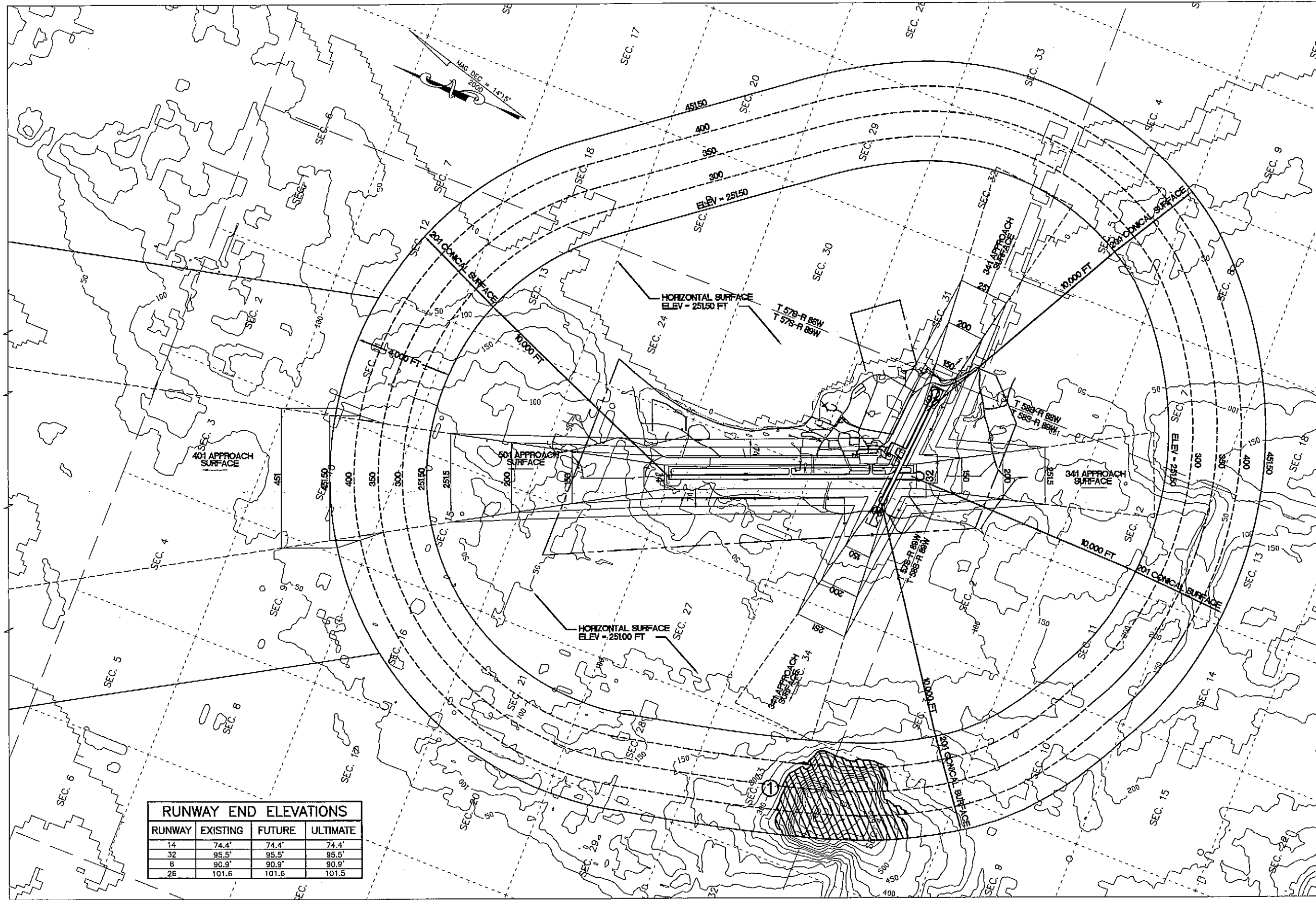
AIRPORT LAYOUT PLAN

RUNWAY 08/26 APPROACH SURFACES PLAN & PROFILE

SHEET
8
OF
14

FILE:
Z:\ALP9
DATE:
02/17/04

RUNWAY END ELEVATIONS			
RUNWAY	EXISTING	FUTURE	ULTIMATE
14	74.4'	74.4'	74.4'
32	95.5'	95.5'	95.5'
8	90.9'	90.9'	90.9'
2E	101.6	101.6	101.5



OBSTRUCTION DATA TABLE			
NUMBER	PENETRATION DISTANCE (FEET)	DESCRIPTION	DISPOSITION
1	525'	TOPOGRAPHY IN CONICAL SURFACE	MAX. HEIGHT OBSTR. (MSL) 925'

FAA AIRSPACE REVIEW NUMBER:
02-AAL-166NRA

AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL
SUBJECT TO ALP APPROVAL LETTER DATED 02/17/04

By: [Signature] DATE: 02/17/04

F.A. AIRPORTS DIVISION
ALASKAN REGION, AAL-810

COLD BAY AIRPORT

AIRPORT LAYOUT PLAN

F.A.R. PART 77

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

CENTRAL REGION

APPROVED: [Signature]

STEPHEN M. RYAN, P.E.

DESIGN SECTION CHIEF

APPROVED: [Signature]

HARVEY M. GOURDET, P.E.

PROJECT MANAGER

DATE: 02/17/04

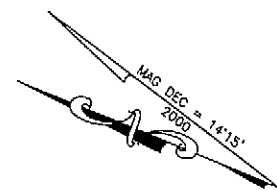
DESIGN: LMB

DRAWN: SUM

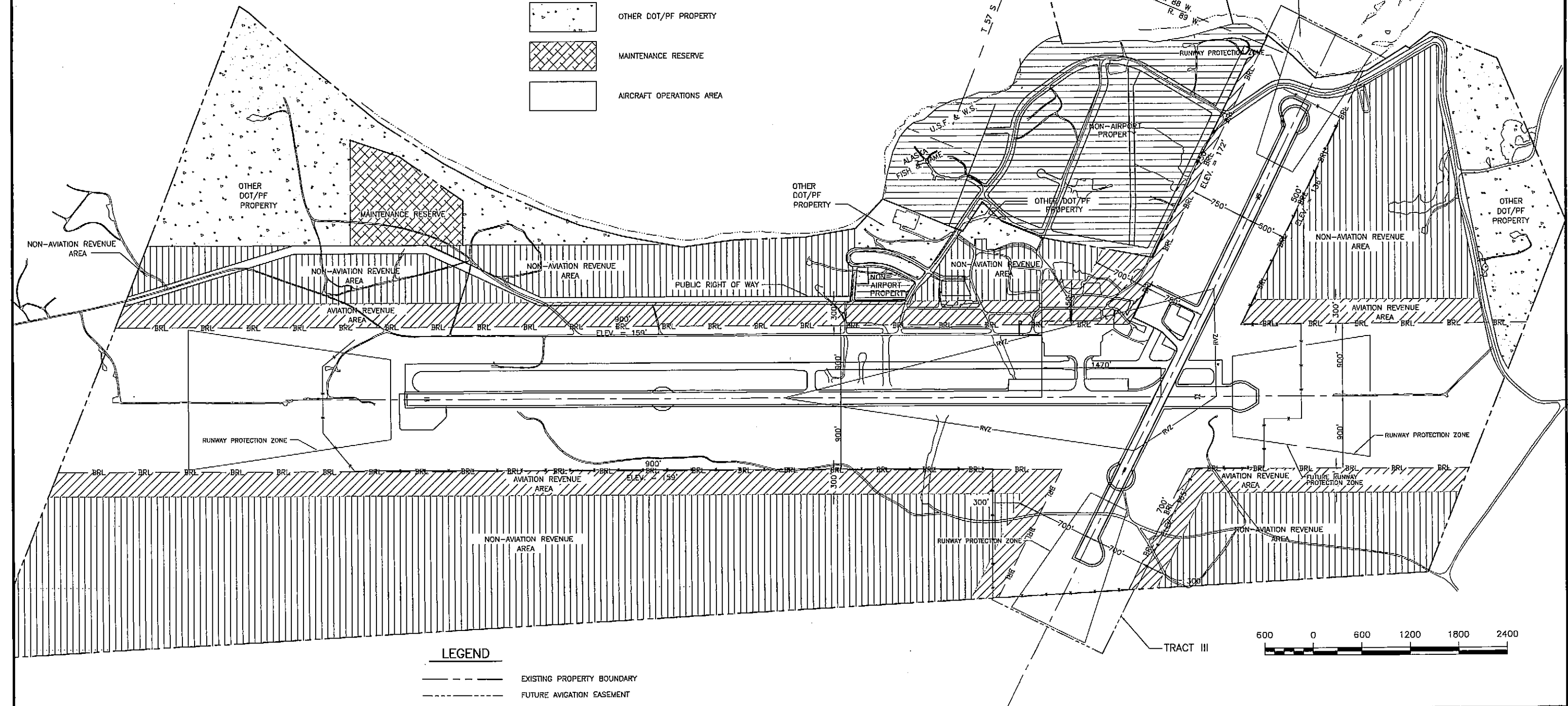
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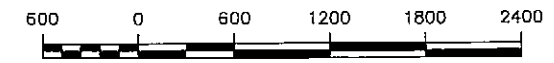
REVISIONS



- PROPERTY LEGEND
- AVIATION REVENUE AREA
 - NON-AVIATION REVENUE AREA
 - NON-AIRPORT PROPERTY
 - OTHER DOT/PF PROPERTY
 - MAINTENANCE RESERVE
 - AIRCRAFT OPERATIONS AREA



- LEGEND
- EXISTING PROPERTY BOUNDARY
 - FUTURE AVIGATION EASEMENT



FILE: Z:\ALP10
DATE: 02/17/04 1=1 v=plan daveb

AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL
SUBJECT TO ALP APPROVAL LETTER DATED 5/12/04
BY: [Signature] DATE: 5/12/04
FAA AIRPORTS DIVISION
ALASKAN REGION, AAL-810

FAA AIRSPACE REVIEW NUMBER: 02-AAL-166NRA

BY	DATE	REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION
APPROVED: [Signature] DESIGN SECTION CHIEF
STEPHEN M. RYAN, P.E.
APPROVED: [Signature] PROJECT MANAGER
HARVEY M. DOUTHITT, P.E.

DATE 02/17/04
DESIGN LMB
DRAWN SJM
CHECKED ESW

COLD BAY AIRPORT
AIRPORT LAYOUT PLAN
LAND USE PLAN

SHEET
10
OF
14

1. This field survey was executed on May 12-15, 2001, by McCintock Land Associates, Inc.
2. All horizontal positions were surveyed using Ashtech GPS dual frequency receivers. All processed GPS data meets or exceeds loop closures of 1:10,000.
3. The Basis of bearing is between centerline monuments on the cross wind runway (6-28) with a forward NAD 83 geodetic bearing, (S 85° 19' 47" E) from centerline intersection, STA. 49+02.6, to centerline monument of cross wind runway (8-26), STA. 26+13.83.
4. The bearings shown are local plane bearings as oriented to the basis of bearing, and distances shown are reduced to horizontal ground distances
5. Local grid coordinate system is based on a 2 1/4" brass cap monument, in case, at the intersection of Runway (08-28) and runway (14-32). Local coordinates were assigned to found brass cap of, N 50,000.000(H); E 50,000.000(H), in U. S. Survey feet,
6. Vertical datum is based on Gold Bay Airport triangulation station T4A, which was held at the bearing elevation, by the Alaska Department of Transportation and Public Facilities (ADOT&PF) (38.08'). A differential level loop through monuments T4A (555) and NGS benchmark BM4 (644), produced a elevation of (87.64') for T4A, approximately .5' lower than the elevation used for this project.
7. The magnetic declination of 14 1/4' E was computed at point "T4A" using GeoMagix software based upon year 2000 magnetic model.
8. All Township information shown is protracted.
9. Foot to Meter conversion is 1200/3937
10. On 9-4-79 a portion of Tract I was conveyed to the state department of Natural Resources by commissioners deed. An avigation and hazard easement was retained over the lands by DOT/PP. The lands conveyed were lots 4-17, block B of ASLS 79-82, Gold Bay Subdivision.
11. On 1-5-95 a portion of Tract I was conveyed to the state department of Natural Resources by commissioners Quitclaim deed. An avigation and hazard easement over the lands by DOT/PP. The lands conveyed were tract A,C,D,E,F, and I of ASLS 90-286; a portion of tracts G and K of ASLS 90-286 shown as parcel L and M.
12. On 7-16-73 an interagency land management transfer (LMT) was granted by DNR for Tract II identified as ATS 910. On 4-23-93 DOT/PP relinquished the LMT to DNR and on 6-3-82 DNR issued a permit, avigation and hazard easement to DOT/PP over these lands.

LINE TABLE [ft]		
LINE	LENGTH (R)	BEARING
L1	491.32	S69°43'18"W
L2	1074.97	N50°51'12"W
L3	200.62	N02°37'42"W
L4	865.79	S55°04'34"E
L5	491.32	N69°43'18"E
L6	872.27	S23°26'50"W
L7	645.45	S29°15'14"E
L8	197.76	S114°20'2"E
L9	542.90	S114°47'7"E
L10	499.67	S07°08'42"E
L11	490.91	S00°55'19"E
L12	769.05	S01°11'43"W
L13	595.73	S05°15'08"W
L14	926.50	S10°10'47"W
L15	1221.70	S17°06'41"W
L16	862.55	S19°04'08"W
L17	142.96	S12°02'13"W
L18	891.77	N85°13'47"W
L19	1520.00	N04°46'13"E
L20	24.39	N85°13'47"W
L21	2124.33	S38°28'10"W
L22	1266.91	N68°41'21"E
L23	633.18	S03°28'10"W
L24	950.26	S12°23'26"W
L25	537.00	S68°21'21"E
L26	435.67	S21°38'39"W

CURVE	CHORD BEARING	CHORD LENGTH	LENGTH (R)	RADIUS
C1	S44°16'57"W	480.23	483.99	1119.31
C2	S63°10'47"W	125.32	125.59	550.00
C3	N09°26'13"E	86.89	105.22	50.00
C4	S26°44'28"E	612.80	631.27	750.00
C5	N28°51'12"W	265.14	274.63	300.00
C6	S46°03'53"W	375.18	377.33	1019.31
C7	S63°10'48"W	102.53	102.76	459.00



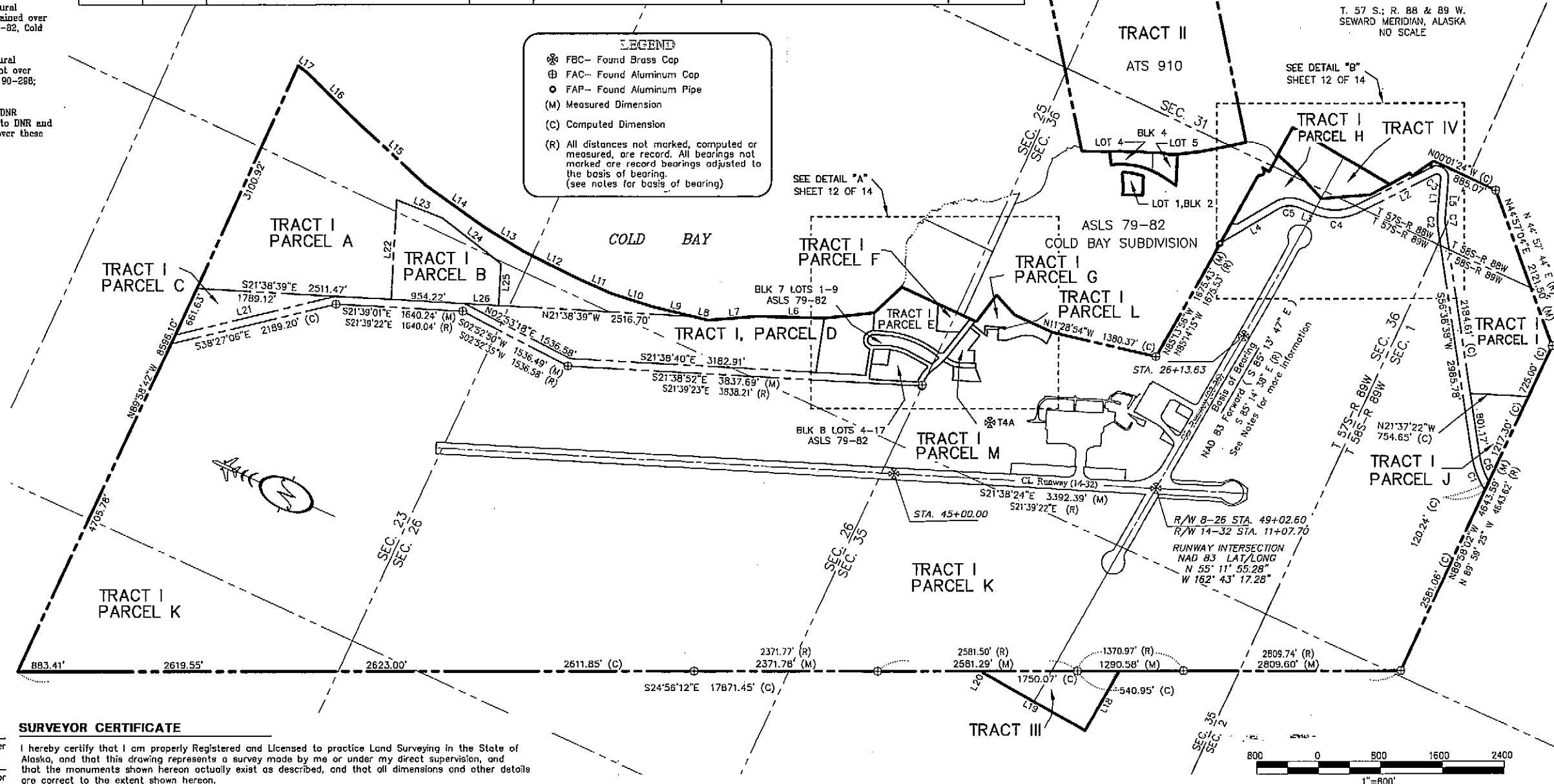
Date	Registration Number
Gary D. Kowal	Registered Land Surveyor

AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL
SUBJECT TO ALP APPROVAL LETTER DATED 5/15/04

By: J. L. F.
FAA, AIRPORTS DIVISION
ALASKAN REGION, AAL-610

FAA AIRSPACE REVIEW NUMBER: 02AAL-166NRA


PROPERTY STATUS						
TRACT	PARCEL	DESCRIPTION	ACRES	OWNER	D.O.T. & P.F. INTEREST	DATE ACQUIRED
I	A	TRACT A OF ASLS-90-298	141.05	ALEUTIANS EAST BOROUGH	AV & HAZ EASEMENT	1/5/95
I	B	TRACT B OF ASLS-90-298	30.67	STATE OF ALASKA, D.O.T. & P.F.	FEE SIMPLE, SEC. 45, AK, OMNIBUS ACT	6/1/66
I	C	TRACT C OF ASLS-90-298	12.63	ALEUTIANS EAST BOROUGH	AV & HAZ EASEMENT	1/5/95
I	D	TRACT D OF ASLS-90-298	69.47	ALEUTIANS EAST BOROUGH	AV & HAZ EASEMENT	1/5/95
I	E	TRACT E OF ASLS-90-298	10.89	ALEUTIANS EAST BOROUGH	AV & HAZ EASEMENT	1/5/95
I	F	TRACT F OF ASLS-90-298	2.33	ALEUTIANS EAST BOROUGH	AV & HAZ EASEMENT	1/5/95
I	G	TRACT G OF ASLS-90-298	.22	STATE OF ALASKA, D.O.T. & P.F.	FEE SIMPLE, SEC. 45, AK, OMNIBUS ACT	6/1/66
I	H	TRACT H OF ASLS-90-298	58.47	STATE OF ALASKA, D.O.T. & P.F.	FEE SIMPLE, SEC. 45, AK, OMNIBUS ACT	6/1/66
I	I	TRACT I OF ASLS-90-298	10.52	ALEUTIANS EAST BOROUGH	AV & HAZ EASEMENT	1/5/95
I	J	TRACT J OF ASLS-90-298	10.52	STATE OF ALASKA, D.O.T. & P.F.	FEE SIMPLE, SEC. 45, AK, OMNIBUS ACT	6/1/66
I	K	TRACT K OF ASLS-90-298	1,828.24	STATE OF ALASKA, D.O.T. & P.F.	FEE SIMPLE, SEC. 45, AK, OMNIBUS ACT	6/1/66
I	L	METES & BOUNDS	5.90	ALEUTIANS EAST BOROUGH	AV & HAZ EASEMENT	1/5/95
I	M	TRACTS K-3,K-4,K-5,K-6,K-7 & K-8 OF ASLS 94-13B	2.44	ALEUTIANS EAST BOROUGH	AV & HAZ EASEMENT	1/5/95
		LOTS 1-9, BLOCK 7, ASLS 79-82		STATE OF ALASKA, D.O.T. & P.F.	FEE SIMPLE, SEC. 45, AK, OMNIBUS ACT	6/1/66
		LOTS 1-3, BLOCK 8, ASLS 79-82		STATE OF ALASKA, D.O.T. & P.F.	FEE SIMPLE, SEC. 45, AK, OMNIBUS ACT	6/1/66
		LOTS 4-17, BLOCK 8, ASLS 79-82			AVIGATION & HAZARD EASEMENT	9/4/79
II		ALASKA TIDAL SURVEY 910		STATE OF ALASKA, D.O.T. & P.F.	AVIGATION & HAZARD EASEMENT	8/3/93
III		AVIGATION ESMT. FOR FUTURE RUNWAY PROTECTION ZONE	15.98		TO BE ACQUIRED	
IV		AVIGATION ESMT. FOR FUTURE RUNWAY PROTECTION ZONE	13.97		TO BE ACQUIRED	




SURVEYOR CERTIFICATE

I hereby certify that I am properly Registered and Licensed to practice Land Surveying in the State of Alaska, and that this drawing represents a survey made by me or under my direct supervision, and that the monuments shown hereon actually exist as described, and that all dimensions and other details are correct to the extent shown hereon.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION - AVIATION

APPROVED: 
STEPHEN M. RYAN, P.E. DESIGN SECTION CHIEF

APPROVED: 
HARVEY M. DOUTHETT, P.E. ENGINEERING MANAGER

Date Drawn: 02/16/04
Designer:
Drawn by: KQ
Checked by: GDK

COLD BAY AIRPORT
AIRPORT PROPERTY PLAN

SHEET
11
OF
14

FILE:
Z:ALP11-12
DATE:
02/16/04
PLOT SCALE:
1=1
REVISED BY:
KD

A. Introduction

Cold Bay is a second-class city in the Aleutians East Borough, located at 55.12° North latitude, 162.43° West longitude. The Aleutians East Borough is a municipal government that spans over 15,000 square miles, encompassing 6 communities and roughly 2,700 people. Preliminary 2000 U.S. Census data indicate that Cold Bay has 88 residents, a decrease from 148 people in 1990. The city is approximately 40 miles from the western end of the Alaska Peninsula on Cold Bay near Izembek Lagoon. Manufacturing, which includes seafood processing, the service industry (including tourism), and government (both state and federal, which focuses on Aleutian transportation and wildlife protection) provide the majority of local employment. Cold Bay provides facilities to assist the fishing industry and has a promising future as a service and fueling center for the bottom fish industry.

During World War II, Cold Bay was the site of Fort Randall, a strategic air base. The airport, built in 1942, consists of a 10,420-foot by 150-foot primary runway (Runway 14/32) that is paved and lighted and has a precision instrument approach. The airport also has a 5,160-foot by 150-foot paved and lighted crosswind runway. The airport is attended six days per week and also has an attended flight service station (FSS) operated by FAA.

The present role of the airport is as a regional transportation center and transfer point for passengers and cargo traveling from Anchorage or Fairbanks to outlying communities including False Pass, King Cove, and Nelson Lagoon. The airport also accommodates flights diverted from other destinations due to inclement weather or other reasons, and for the refueling of flights to other Aleutian destinations and to some international flights. In addition, the airport is used for medevac flights for patients from surrounding communities, as well as being a base for U.S. Coast Guard search and rescue missions.

Table 1 Distances from Cold Bay Airport to other airports in the region	
Airport	Nautical Miles
Adak	536
Anchorage	539
Dillingham	269
Unalaska	155
King Salmon	269
Shemya	830
St Paul	278

B. Airport usage and fleet mix

Cold Bay currently receives scheduled service from Peninsula Airways and Evergreen International Aviation. Because Reeve Aleutian Airways no longer provides scheduled service in Alaska, Peninsula Airways has recently increased scheduled service to Cold Bay to seven days a week using the Fairchild Metroliner III and 23, and the Saab 340.

The Federal government does not have an essential air services contract for ADAK service. In the past holders of this contract have served Cold Bay on weekly basis with C-III jet aircraft.

ERA Aviation and Kenai Float Plane offer on-demand (charter) service for passengers and cargo. Evergreen Helicopters provides service to Cold Bay by charter or contract for cargo and passengers. Northern Air Cargo provides cargo service to Cold Bay.

Data reported in the FAA 5010 Airport Master Record for Cold Bay Airport collected during the May 2000 inspection, indicates that 53% of air operations were by air taxi, 30% by transient GA aircraft, 9% by commercial operators, 4% by based GA aircraft and 4% were military operations. The record reports an average of 73 operations per week at Cold Bay Airport.

Large Certificated Aircraft Activity. Aircraft operations by large certificated aircraft are reported in the FAA Airport Activity Statistics of Certificated Air Carriers for the last nine years. During this period of time, the Boeing 727-100C performed 53% of the total operations. The Lockheed 188 Electra performed 26% of the total operations and the Boeing 737-200C performed 12% of the total operations. The remaining 9% was distributed among a variety of other aircraft. It should be noted, however, that the operator of the Boeing 727-100C, Reeve Aleutian Airways, discontinued service to Cold Bay in 2000. Evergreen and Northern Air Cargo have reported that they plan a similar number of operations with similar aircraft as the Reeve historical activity.

Small Certificated Aircraft Activity. In addition to the large certificated aircraft operations, smaller aircraft like the Saab 340 and Fairchild Metroliners operated by Peninsula Airways provide service to and from Cold Bay. Peninsula Airways' Fairchild Metroliners and Saab 340 will perform approximately 1400 annual operations each (daily service plus 5% for charter and unscheduled cargo flights, plus fuel stops for their Adak service). Though not scheduled, ERA Aviation provides service to Cold Bay via Adak. ERA Aviation estimates a total of 48 annual operations with either the DASH-8 or Convair 580 (ARC B-III aircraft).

Historical trends in passenger enplanements and aircraft operations as reported to the U.S. Department of Transportation and estimated during airport inspections performed by the FAA Office of Airport Certification have been analyzed. Total passenger enplanements at Cold Bay Airport peaked at 11,756 in 1992. Enplanement lows (9,489) were reported in 1990 and 2000. This data indicates that passenger enplanements have remained fairly steady during the last ten years even though there has been a 40% decrease in the population of this small community.

Aircraft operations data for all types of air service were acquired from the FAA Terminal Area Forecast and 5010 Airport Master Record. According to this data, total aircraft operations peaked at 3,819 in 1990 and dipped to a period low of 2,255 in 1995 and 1998. The decrease in air carrier activity and corresponding increase in commuter/air taxi activity is likely the result of a shift experienced in many communities in Alaska. Overall, the aircraft operations data presented indicate a relatively steady rate of activity without significant growth or decline.

Table 2 Historical Passenger Enplanements and Aircraft Operations (1990-2000)								
Year	Passenger Enplanements			Aircraft Operations				
	Air Carrier	Commuter	Total	Itinerant Air Carrier	Commuter Air Taxi	GA	Local GA	Total
1990	6,290	4,085	10,375	1,564	950	1,155	150	3,819
1991	6,555	3,129	9,684	1,522	950	1,155	150	3,777
1992	7,099	4,657	11,756	876	876	1,155	150	3,057
1993	6,843	4,474	11,317	888	950	1,155	150	3,143
1994	5,999	4,800	10,799	888	950	1,155	150	3,143
1995	9,183	4,667	13,850	0	950	1,155	150	2,255
1996	6,582	5,018	11,600	1,000	1,500	1,155	150	3,805
1997	6,185	4,361	10,546	500	2,000	1,155	150	3,805
1998	6,180	3,912	10,092	200	750	1,155	150	2,255
1999	5,726	3,763	9,489	350	2,000	1,155	150	3,655
2000	5,726	3,763	9,489	350	2,000	1,155	150	3,655

Commercial Cargo and mail service provides residents with a means of importing and exporting goods to and from the community. Data reported for Cold Bay Airport in the FAA Airport Activity Statistics of Certificated Air Carriers database for 1990 to 1996 indicates that combined cargo and mail averaged 1,386,000 pounds per year. Cargo ranged from a high of 1,236,000 pounds in 1994 to a low of 450,000 pounds in 1996. Mail ranged from a low of 132,000 pounds in 1991 to a high of 954,000 pounds in 1996.

C. Aviation demand Forecast

The tables below present the comprehensive 20-year forecast for the Cold Bay Airport. The values below were projected under a moderate growth scenario for operations, passenger enplanements, cargo enplanements, and based aircraft. There are 5 based aircraft at Cold Bay, this is not expected to change during the forecast period.

Table 3 20-Year Aviation Forecast				
	Base Year 2001	5-Year 2005	10-Year 2010	20-Year 2020
Aircraft Operations				
Air Carrier	781	817	863	955
Commuter/Air Taxi	1,389	1,454	1,535	1,698
General Aviation	1,503	1,574	1,662	1,837
Total	3,673	3,845	4,060	4,490
Enplaned Passengers	9,521	9,693	9,908	10,336

Table 4 Forecast Large and Commuter Fleet Mix with Scheduled Service, 2020						
Aircraft	Category	Approach Speed (knots)	Wingspan (ft)	ARC	Maximum Takeoff Weight (lbs.)	Forecast Operations
Boeing 727-100	Medium-Haul Airliner	125	108	C-III	160,000	250
MDC DC-6*	Medium-Haul Airliner	108	118	B-III	104,000	24
Fairchild Metroliner	Short-Haul Airliner	112	57	B-II	16,500	700
Saab 340	Short-Haul Airliner	91-121	70	B-II	29,000	700
DASH-8	Short-Haul Airliner	90	90	A-III	41,000	50
Convair 580	Short-Haul Airliner	107	105	B-III	51,600	
Airport Reference Code, Maximum takeoff weight, Not ascertained						
Source: Compiled by HDR Alaska, Inc. October 2001						
* flag stop only for MDC DC-6						

Based on an evaluation of the aircraft performance specifications for the forecast fleet mix, the Boeing 727-100 Combi will require the greatest runway length which is 8,350 feet - for operations at 100% of its maximum operational weight. The Fairchild Metroliner and Saab 340 require between 3,550 and 4,230 feet of runway for maximum weight operations, respectively.

According to operator reports, conditions of cooler maximum monthly temperatures, sea level or near sea level elevations, and stage lengths for the region indicate that approximately 6,500 ft is a useful "full length" runway for 727-100 Combi operations.

Cold Bay however, also serves as an alternate destination for transpacific flights. These flights are large aircraft such Boeing 747-200, 747-400, 757 and 767 aircraft. These airplanes require approximately 10,000 ft. for a useful full length runway. Because these flights may need to use this runway and because of the remote situation of the Cold Bay airport, the main runway should be maintained at a length of 10,000 ft.

The existing primary Runway 14/32 has sufficient length to accommodate maximum takeoff and landing operations by the Boeing 727, Fairchild Metroliner, and Saab 340. Operations on crosswind Runway 8/26 by the Boeing 727 are currently weight restricted to 84% of the aircraft's maximum takeoff weight and 78% of the aircraft's maximum landing weight. The existing crosswind runway has sufficient length to accommodate maximum takeoff and landing operations by the Fairchild Metroliner and Saab 340.

According to an analysis of the wind at Cold Bay Airport, aircraft below ARC C-IV, such as the Boeing 727-100 Combi (ARC C-II), Fairchild Metroliner, and Saab 340 (ARC B-II) do not have sufficient wind coverage on Runway 14/32. Therefore a crosswind runway is required. The length of this runway should be 80% of the full length required for the design aircraft. Therefore the crosswind runway should be approximately 6,680 ft in length. Operator reports indicate that take off operations are the critical operation for the runway, since the stage lengths to Cold Bay burn off a considerable quantity of fuel.

The property available for the crosswind runway constrains the embankment length to 6,235 ft. Obtaining 5,235 ft for take off operations, and allowing for full 1,000 ft safety areas will necessitate the use of declared distances. Accordingly the declared distances are as follows:

Table 5 Declared Distances			
Runway	Operation	Parameter	Distance
8	Landing	Landing distance available	4,235 ft.
8	Take Off	Accelerate stop distance	5,235 ft.
8	Take Off	Take off run available	5,235 ft.
8	Take Off	Take off distance available	5,235 ft.
26	Landing	Landing distance available	4,235 ft.
26	Take Off	Accelerate stop distance	5,235 ft.
26	Take Off	Take off run available	5,235 ft.
26	Take Off	Take off distance available	5,235 ft.

Runway 14/32 and Runway 8/26 should be designed to accommodate the 727-100 Combi and meet ARC standards for C-III aircraft as shown in Table 6 below.

Table 6 Design Criteria	
Parameter	C-III Design Value
Runway Width	150'
Runway Shoulder Width	25'
Runway Blast Pad Width	140'
Runway Blast Pad Length	200'
Runway Safety Area Width	500'
Runway Safety Area Length Beyond RW End	1,000'
Obstacle Free Zone Width	500'
Obstacle Free Zone Length Beyond RW End	200'
Runway Object Free Area Width	800'
Runway Object Free Area Length Beyond RW End	1,000'

D. Airport Development Rationale

Runway 14/32. The length and width of this runway are sufficient for the expected fleet mix and the condition of the runway is good. This runway is deficient in safety areas and in not having a parallel taxiway. PCI for this runway is generally 87-96. At present the pavement is deteriorating at a rate of 2 points per year. Therefore the runway should be scheduled to be resurfaced in 2005-2007. The lights on this runway are 25 years old. They should be reviewed for replacement in conjunction with the resurfacing project.

The safety areas on both ends of this runway are deficient. On the south (32) end of the runway the ground drops off sharply to a creek drainage that is 64 feet below the runway end elevation. This creek is incised in its channel and presents a constraint to expanding the runway safety area. On the north (14) runway and the ground also falls off in elevation and there is a creek about 1,300 feet north of the present threshold, however it is feasible to construct a safety area of standard dimension at maximum acceptable grade in this location without shifting the 14 threshold.

Because of this the following ultimate development is recommended for R/W 14-32:

- Construct a 1,000 ft x 500 ft safety area behind the 14 threshold. This will preserve the current location of the 14 threshold and thus the cat. 1 ILS approach for this runway will remain unchanged.
- Move the 32 threshold north 420 ft so that a 1,000 ft x 500 ft safety area can be constructed without impacting the creek channel south of the runway. This will necessitate relocating the MALSR approach lighting system for this runway and will shorten R/W 14-32 from present length of 10,420 ft to 10,000 ft. Changing the length of this runway is not expected to adversely affect operations at this runway even for D-IV aircraft because of the long stage lengths and cool temperatures in Cold Bay.

FAA AC150/5300-13 change 6 appendix sixteen suggests a parallel taxiway for instrument approach runways. A full parallel taxiway 50 ft wide should be provided in long term development. This taxiway should be provided with connecting taxiways at each runway end, one connecting taxiway located 5,000 ft from the 14 runway end in addition to taxiway C which already exists. This parallel taxiway should be extended to connect the south terminal apron to allow refueling operations without traversing the active runways.

Runway 8/26. Runway safety areas for R/W 8-26 are deficient at both ends. On the east (26) end extension of the safety area is constrained by the steep fall off of ground towards Cold Bay 100 ft below the runway elevation and by the presence of a road that leads towards Russell Creek. On the west (8) end there is generally flat terrain falling off gently for about 1,400 ft until the airport property line is encountered. Expansion of the airport beyond the property line is constrained by the presence of the Izembek National Wildlife Refuge.

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AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL
SUBJECT TO ALP APPROVAL LETTER DATED 5/12/04

By: *[Signature]* DATE: 5/22/04
FAA AIRPORTS DIVISION
ALASKAN REGION, AAL-810

FAA AIRSPACE REVIEW NUMBER: 02-AAL-166NRA

BY	DATE	REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: *[Signature]* DESIGN SECTION CHIEF
STEPHEN M. RYAN, P.E.
APPROVED: *[Signature]* PROJECT MANAGER
HARVEY M. DOUTHETT, P.E.

DATE 02/17/04
DESIGN LMB
DRAWN SIM
CHECKED ESW

COLD BAY AIRPORT

AIRPORT LAYOUT PLAN

NARRATIVE REPORT

SHEET

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Because of these constraints the following development is recommended for R/W 8-26:

- (a) Construct a 1,000 ft x 500 ft safety area behind threshold 8. The location of threshold 8 should remain unchanged. This ensures that approach and departure patterns over the refuge to the west remain unchanged which is a stated concern of refuge managers.
- (b) Move the 26 threshold west 925 feet to provide 1,000 ft x 500 ft safety area behind the threshold. This has the effect of shortening the threshold length of the cross wind runway from 5,160 ft to 4,235 ft.
- (c) In order to accommodate the C-III design aircraft take offs, both safety areas should be constructed with full strength pavement sections extending 1,000 feet behind each threshold for a width of 150 ft. This will provide a Take off Run Available (TORA) of 5,235 ft for both runways. Forecasting information indicates that the take offs are the critical operation at Cold Bay because the long stage lengths require a large fuel load at take off and result in a large fuel burn off before landing at Cold Bay. Forecasting information indicates that design aircraft landing operations will not be adversely affected by the 4,235 ft landing distance available.

Runway 8/26: This runway should be reconstructed to rectify the failing pavement, lighting in need of replacement, and the safety areas are deficient. The runway safety areas should be constructed to a width of 500 ft, extending 1,000 ft beyond each threshold. This will require relocating a small gravel service road at the 26 runway end. Pavement strength should match that of the rest of the airport. The keel section which was reconstructed in 1989 should remain. Presently the shoulders are not paved on this runway and this should remain unpaved because no operational problems have been reported due to the lack of paved shoulders. The current HIRL runway lighting is more than twenty years old, has many leaning standards and should be replaced. The runway should be striped with non-precision runway markings. To accommodate the declared distances for additional take off run the safety areas should be paved with a full strength structural section to create 1,000 ft x 150 ft additional ASD and TORA for each runway end.

The light traffic at Cold Bay and the fact that most operators strongly prefer the main runway due to increased instrumentation and length, indicates that a parallel taxiway is not warranted for runway 8/26. Because the design aircraft will have difficulty turning around on the 150 ft width of runway, a "bulb" type of turnaround should be provided at each end of the runway. This should consist of a 300 ft diameter full strength paved area centered on the end of the safety area structural section. This will allow the design aircraft to proceed past the threshold, make the turn and be positioned for the take off to be able to make use of the airport's declared distances.

Because of the deteriorating pavement condition and the need for full safety areas, reconstruction of runway 8/26 should be accomplished in the near term.

Aids to navigation: Cold Bay Airport has an instrument landing system (ILS) on Runway 14 and non-precision approach on Runway 32. All four runway approaches at Cold Bay have VASI's. There is also a VOR and a rotating beacon for the airport. The instrument aids to navigation should be retained. The VASI's should be replaced with precision approach path indicators, (PAPI), and REIL, provided for all runway ends.

Standby power generation and lighting controls: It is advantageous to consolidate the standby power generation and airport lighting controls in one location. The present generators and regulators are old and are in need of replacement. Moving both to the ARFF building would have the advantage of providing standby power for the building, which would be useful during emergencies, and would make the emergency response independent of the public electric power utility. This would also allow the airport lighting circuits to be located entirely on airport property.

Terminal Aprons: Presently most aircraft use the north terminal apron, largely because the Peninsula Airways terminal is attended and has a telephone and rest room available. This concentration of activity means that both large and small aircraft use the same apron. It is desirable to shift large aircraft activity to the south terminal apron, this would be facilitated by an active tenant on the south terminal apron. The building that was used by Reeve for a passenger facility does have a segregated gate and passenger screening equipment. In order to encourage and facilitate use of the south terminal apron by large aircraft it is necessary to reconstruct a portion of the pavement on this apron and to correct drainage problems around the passenger terminal building. This should be scheduled for near term development.

ARFF building paving: The airside approach to the ARFF building, which is used by the emergency response vehicle, is via the north terminal apron. This paved driveway is in poor condition and is adjacent to a partially paved outside parking area. Maneuvering the response vehicle into and out of the garage involves traversing the unpaved portion of this parking area. FAA guidance on access roads states that if they are unpaved, then the final 300 feet should be paved to avoid tracking mud and debris onto areas where aircraft operate. Three hundred feet of separation between the parking area and the north terminal apron is not possible. Therefore, the simplest and best solution is to pave the entire area, including replacement of the cracked asphalt on the driveway to the apron. This should be scheduled for near term development.

Taxiway system: In conjunction with the apron work problems with the connecting taxiways should be addressed. Both of the connecting taxiways between Runway 8/26 and the south terminal apron have a hump that has been reported to cause operational difficulties for airplanes. The sustained high winds and concurrent icing conditions experienced in Cold Bay warrant correcting these grades so that aircraft can operate safely on the ground. As discussed for RW 14/32 a parallel taxiway is planned for future development, this taxiway should also be extended to the south terminal apron to allow fuel trucks and airplanes to access both aprons without using the runways for ground movements.

Non Standard Conditions:

Many important buildings in Cold Bay fall within a recommended line of site triangle defined by AC 150/5300-13 (paragraph 503) as the Runway Visibility Zone (RVZ). The AC recommends maintaining visibility between runway 14 and runway 26 within this zone from an elevation of 5 feet above either runway. Most of the structures within this zone are airport support facilities and while others are community buildings not directly associated with the airport. Some of the buildings include the FSS, ARFF, community clinic, church, post office, store, hangars, fuel vendor and various operators' terminal buildings. Moving these structures out of the runway visibility zone is not warranted and the costs associated with doing so are not justified by this situation and conditions at Cold Bay. The arguments presented below outline why these buildings do not represent a significant risk when evaluated for the specific situation and operations at Cold Bay. Until or unless operational forecasts change, it does not make economic sense to relocate the existing structures outside of the RVZ. In effect, full compliance with the recommended RVZ would require relocation of the majority of the community of Cold Bay and would represent an economic hardship on the community that is unnecessary and unwarranted for the following reasons:

- The Cold Bay Airport currently experiences a relatively low number of operations. While there are efforts to stimulate regional economic development, there is nothing definite to increase operational forecasts. As such, simultaneous operations are not required during the forecast period to meet current or projected demand.
- There is a staffed flight service station at Cold Bay that represents a level of observation, communication and guidance for aircraft operations during working hours. Most flights occur during hours that the FSS is staffed.
- In low wind conditions pilots have no reason to taxi almost a mile to the end of runway 26 to take off. It follows that in these low wind conditions there is virtually no chance of aircraft taking off toward each other from runways 14 and 26. When landing in calm conditions, larger jet aircraft will always use the longer runways 14 or 32 and small to medium commuter sized aircraft that choose to land on runway 26 at the same time would be taxiing, or off of the runway, long before reaching the intersection of the two runways.
- In high wind conditions operations would be forced to one runway or the other to avoid crosswind operations. At Cold Bay it is only calm (0-3 knots) 1.3% of the time. Winds over 10.5 knots occur 76% of the time. So Cold Bay is very windy most of the time. In these conditions most operations will be forced to use one runway or the other. Again, minimizing the possibility of conflicting operations.

Non Standard Conditions Continued:

Currently most of the aircraft that regularly use the airport are ARC B-II or below. The most demanding of these aircraft require less than half the length available between the RW 14 threshold and the intersection of RW 14 and 26. This also applies to C-III aircraft. Even with a full load, these larger aircraft require less distance to land or take off than is available between the runway 14 threshold and the intersection of the two runways. In almost any case, aircraft using a RW 14 departure will be airborne and off the runway well before encountering the intersection. The only exceptions to this argument are the rare occasions where larger than C-III aircraft make emergency landings at Cold Bay or when small aircraft choose to start landing or departure rolls (toward the intersection) at mid-field of either runway. The first case, larger than C-III jets using Cold Bay is a rare occurrence and it would be an unreasonable to include these operations (perhaps 1 a year) as an operational risk. And in the second case where small aircraft take off starting at mid-field we would argue that the "effective end of runway" is at the start of rollout and thus there are no obstructions within this alternately defined RVZ to begin with.

All of the factors listed above suggest that simultaneous operations on runways 26 and 14 are unlikely and/or represent little risk for conflicting operations. Regional development could change some of these arguments. If the number of operations or the size of aircraft increases due to regional economic development, there are several remedies the Department could pursue. An Air Traffic Control Tower could be considered if the airport became busy enough to warrant one. Another possible solution would be to shift the main runway north or to displace the threshold of runway 32 so that the runways don't intersect. In addition, future development of the airport should be done with the RVZ in mind.

The long-term goal of the Department and the basis for managing and developing the airport should always consider and attempt to mitigate obstructions within the RVZ. Regional economic development may or may not happen. But if it does, new apron space at Cold Bay should be developed outside of the RVZ. In addition, as the non-airport related facilities that are now within the RVZ are replaced, they should be relocated outside of the RVZ. Any future evaluation of a consolidated passenger terminal should fully consider the RVZ. That consideration might conclude that the terminal should be constructed on a new apron outside of the RVZ entirely. Or it might conclude that many of the existing structures should be replaced and relocated into a single structure to minimize the visual obstructions between the runways.

One of the FSS antennae, labeled "A" on the terminal area plan interferes by 1.79 feet with the Part 77 7:1 transitional surface. This antenna is outside of the OFZ and is behind the BRL. No modifications are planned.

Safety areas for both runways are deficient in both length and width. Construction of standard safety areas for the crosswind runway is scheduled for near term development in conjunction with reconstruction of this runway. Construction of standard safety areas for the main runway is scheduled for midterm development.

The Municipal Solid Waste landfill for Cold Bay is located 2,340 feet east of R/W end 14. Waste is reportedly burned to avoid animal attractions. Operations at the landfill are currently under review as part of a study funded by the Department of Environmental Conservation, Village Safe Water (VSW) program. The VSW project manager is George Wilson, phone number 907-269-7810.

E. Airport Development Schedule:

Near term development

- Reconstruct runway 8/26 including safety areas
- Relocation of service road at RW 8
- Construct runway turnarounds for 8/26
- Reconstruct a portion of south terminal apron
- Replacement of regulators and new standby power generator at ARFF building

Mid term development:

Relocation of FAA FSS. Presently the existing FAA Flight Service Station violates the building restriction line. This building interrupts visibility to some extent between the two runways. The present building is three stories high. The FAA under a separate project is in the process of constructing a new FSS behind the BRL. This will improve the inter-visibility between the runways, but will not allow inter-visibility between the RW 26 midpoint and the RW 14 midpoint.

Security improvements. Currently the side of the airport that is most accessible from the inhabited portion of Cold Bay is fenced. There are security gates at the ARFF building and at the Penn Air building on the north terminal apron. The entire runway perimeter should be fenced. This fencing should be routed adjacent to the BRL, and across the end of the runway safety areas. Gates and fencing should be installed to meet FAA guidance. Portions of the RPZ's for Runway 8 and 26 lie outside of the airport boundary. Acquisition of an aviation easement of approximately 30 acres of land, shown as Tract III and IV on the airport property plan would give the sponsor complete control of the RPZ. At the airport boundary the RPZ is approximately a minimum of 30 feet above the ground surface. Acquisition of Tract III to protect the RPZ for Runway 8 should be pursued as part of mid term development. There are presently no plans by the current land owner, Izembek National Wildlife Refuge, to construct any facilities in the RPZ. There is no road access to this portion of the refuge's land. The mission for the refuge does not have any development plans for this land. Nevertheless acquisition of the RPZ is recommended to assure the airport sponsor of full control of approach airspace for runway 8. Tract IV should also be pursued as part of mid term development. The tidelands are 100 ft. below the runway elevation and there are no scheduled improvements or plans for development which interfere with the RPZ.

Long term development:

Construction of increased safety areas for Runway 14/32. Presently the safety area for the main runway is deficient in length and width. The runway safety area should be constructed to a five hundred foot width, and extended an additional 800 ft beyond runway 14. This will provide a standard runway safety area for runway 14 without resorting to changing the 14 threshold location. For runway 32, the existing 580 ft safety area is constrained to the south by a sharp declivity and a creek. Therefore the threshold for runway 32 should be moved 420 ft to the north to provide a standard 1000 ft safety area for this runway. This will require relocating the VASI's, the MALSR lighting pylons and the Localizer for this runway. Construction of east parallel taxiway for RW 14 and RW 32. Appendix 16 of the AC150/5300 change 6 addresses runway requirements for instrument approaches, this includes the requirement for a parallel taxiway. A parallel taxiway that accesses both runway ends with a hold position outside of the RSA should be provided. The parallel taxiway should be provided with connecting taxiways as shown on the layout plan, and should be extended to allow access to the south terminal apron for refueling without using runway 8/26.

Costs:

Estimated construction costs for near term development are as follows:

Table 7 Estimated Near Term Construction Costs	
Item	Cost
Reconstruct R/W 8-26, including full strength pavement on safety areas for additional TORA	\$6,432,500
Widen R/W 8-26 Safety Area from 300ft to 500ft.	\$506,700
South Apron Reconstruction	\$826,000
Electrical Generator, switch gear modifications, and lighting replacement for R/W 8-26, T/W A and B	\$481,700
Total	\$8,246,900

Costs for mid term and long term improvements have not yet been developed.

F. Coordination

Coordination and public involvement was accomplished on this project by a public scoping process and development of an environmental document, project permits and Finding of No Significant Impact. The scoping meetings were held on August 14 and September 7, 2001. The most significant coordination issue is acquiring aviation easements of 30 acres of Izembek National Wildlife Refuge property from the US Fish and Wildlife Service and the State DNR. This is described as Tract's III and IV on the property plan. The required property interest (aviation easement only) for these parcels will be acquired by the project sponsor as part of mid term development. Coordination with FHWA is not warranted.

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AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL
SUBJECT TO ALP APPROVAL LETTER DATED 5/14/04

By: *[Signature]*
FAA AIRPORTS DIVISION
ALASKAN REGION, AAL-810

DATE: 5/26/04

FAA AIRSPACE REVIEW NUMBER: 02-AAL-166NRA

BY

DATE

REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED:

STEPHEN M. RYAN, P.E.

DESIGN SECTION CHIEF

APPROVED:

HARVEY M. DOUTHETT, P.E.

PROJECT MANAGER

DATE 04/23/04

DESIGN LMB

DRAWN SJM

CHECKED ESW

COLD BAY AIRPORT

AIRPORT LAYOUT PLAN

NARRATIVE REPORT

SHEET

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